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Demon	x	x	✔	£132.50	£132.50	£132.50
Pipex Dial	✔	x	x	£151.75	£151.75	£151.75
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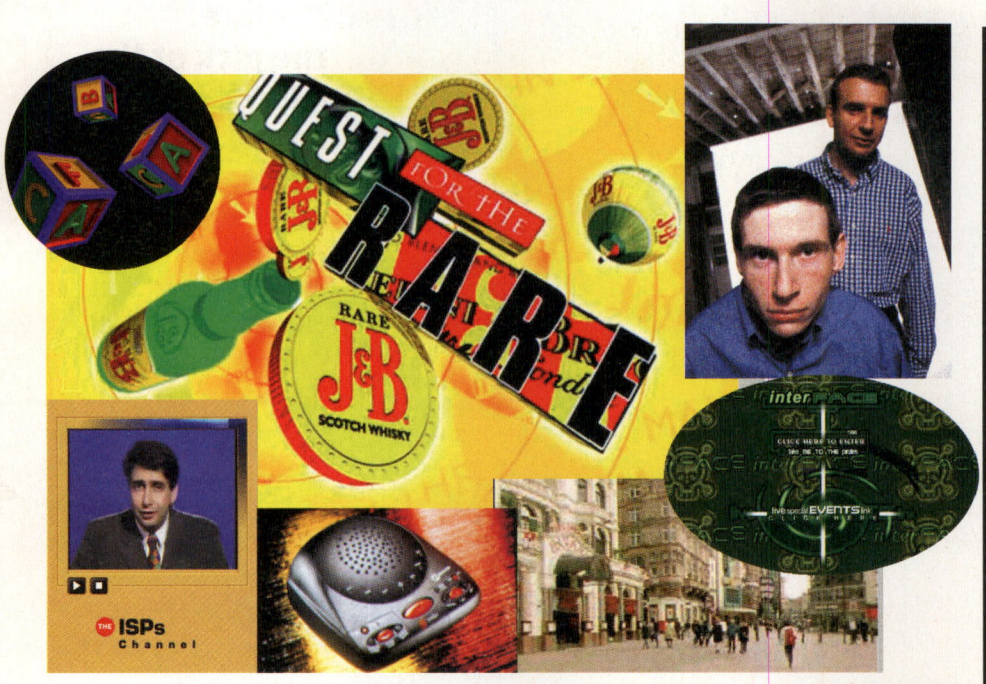

Find out how the One in a Million guys got themselves into such a mess; Silicon News is our Site of the Month; J&B's quest for the rare, Familiar Tales fun learning, and virtual tourism are reviewed; Hot Downloads includes the 10 best Net radio stations; the Pace Solo fax modem gets a Best Buy award

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Bargain-priced way to get Internet access for your business

91 Pace Solo
This stylish modem, fax and answering machine wins our Best Buy award

92 SPG Web tools
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92 HotDog Pro 5
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The most comprehensive listing of the UK's Internet Service Providers

Ask yourself, do you feel lucky?

A grand old institution like the City of London probably makes you think of stability, security and tradition. It certainly does for the world's financial markets – more than £1 trillion passes through the City every single day. And slowly, bit by bit, it's embracing the digital future.

Here at *Internet Magazine* we've certainly had a go at the banks for being too slow at adopting the Internet and offering their customers online banking, but I think I may have discovered why.

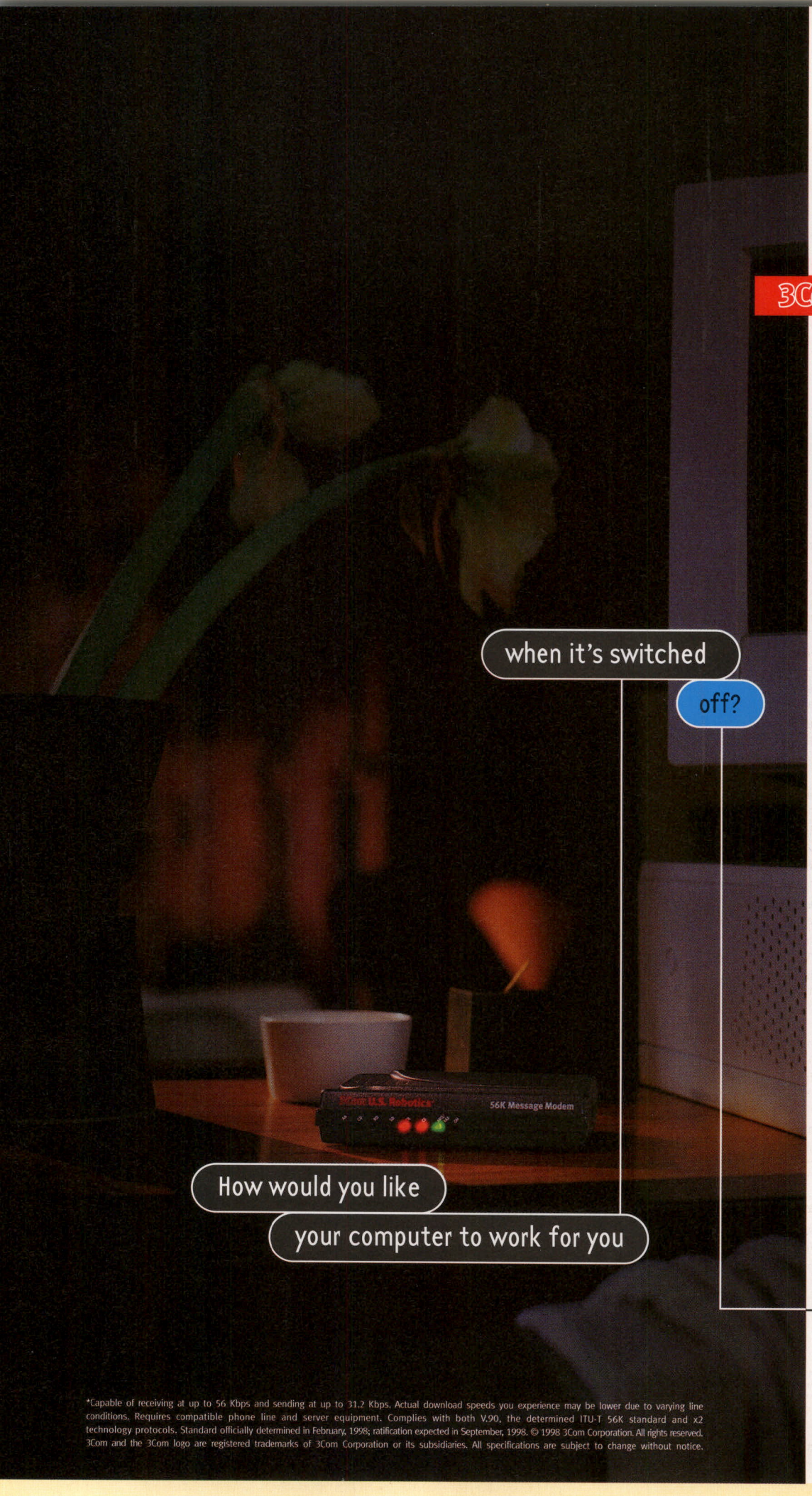
I had a rather interesting meeting, overlooking the River Thames, at which I learned not only that banks are audited on their IT set-ups according to 1985 standards, but also that most banks' IT departments have just one reaction to security problems – add a firewall. Not a bad idea, but hey guys, here's a thought. Change the default password on your routers.

Hackers are rubbing their hands in glee and many banks have had attacks, some of them serious. One bank, which shall remain nameless, not only has a series of firewalls which are fairly easy to penetrate, but once you get through those you have access to the transaction systems, and when you get bored there, you can move straight on to the bank's mainframe!

So, while the banks are humming and hawing over whether to use 40-bit or 56-bit encryption for their Internet link for customers coming in through the front door, they're happily leaving their own back doors open for anyone with a little bit of technical knowhow to come in and clean them out.

And in case you think I'm just scaremongering – check out the hacker newsgroups. There are some very interesting chats underway, with little titbits of security information passing back and forth. But what's surprising is that, despite warnings, banks still believe they're invulnerable. My prediction? A major bank in the City will be hacked and wiped clean before the end of the year. But you know what? I hope I'm wrong.

Mike Hales
Online Editor



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ABC **Audited average monthly circulation: 53,056 (Jul–Dec 1997)**

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(Page 3 has everything you need)

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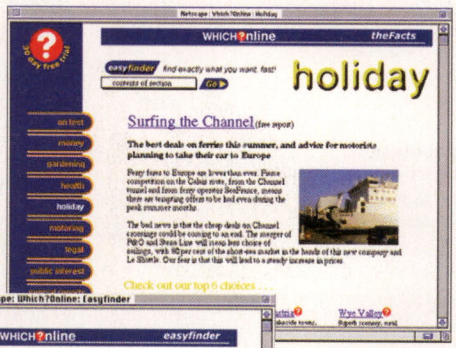
Choosing an ISP can be daunting, but this CD gives *Internet Magazine* users the chance to try Which?Online, the Internet service you can trust, absolutely FREE for 30 days. Which?Online is committed to making Internet access easy, fun and value for money.

If you're new to the Internet, the CD takes you by the hand and gives you everything you need to get connected to the Internet. There's a guided tour showing you how to use Which?Online and the Internet to make the most of the world of information now at your fingertips. Accessing your 30-day free trial couldn't be easier, or quicker, with the step by step online registration process. See below for installation details...



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Installing Which?Online...

If your Web browser doesn't allow you to install the Which?Online software directly, you should access the *Internet Magazine*/Which?Online CD in your CD-ROM drive, open the WHICH_OL folder (then the WIN31 folder for Windows 3.x users, the WIN95 folder for Windows 9.x users, or the MAC folder for Macintosh users) and run the set up program appropriate to your operating system. Alternatively, you could copy the relevant folder to your hard disk and install the software from there.

Using your CD

The interface for the CD is written in HTML, which means you can open it up in any browser. Just open up your browser, select the File /Open option, access your CD drive and then load up the file index.htm.

If you don't have a browser, fear not, we've thoughtfully included the latest versions of Netscape Communicator and Internet Explorer on the CD for Windows 3.x/95 and the Mac. You'll find them in the browsers section of the CD.

Disclaimer

Please note: manufacturers will not support demo software and you install these programs on your machine at your own risk. The CD has been tested for file corruption and viruses using two up to date virus checkers. However, we will not be held responsible for any problems caused by undetected file corruption or any unknown viruses.

Internet Magazine and EMAP Apex cannot be held responsible for any problems arising from their use, or for the failure of any programs to run correctly.

You'll find that most of the software on this CD is shareware. Shareware developers put in a lot of work for little return and you should register software you continue to use after the evaluation period. Charges for shareware are usually very modest and registration entitles you to customer support and free or cheap upgrades.

your cover CD

This month's must-have software

Web Graphics

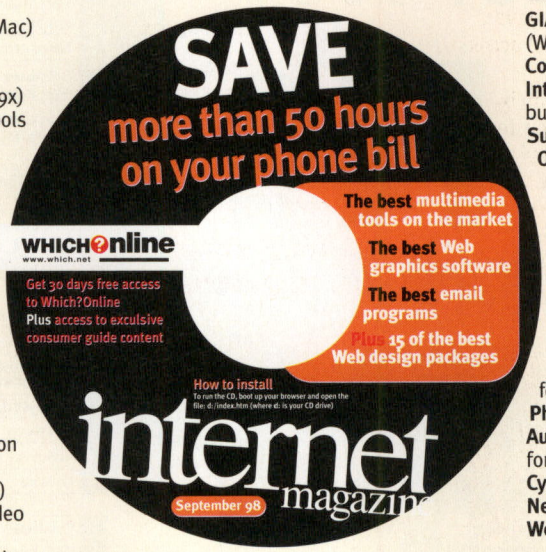
ThumbNailer Deal with images in batches (Win 9x)
LviewPro Image editing and manipulation software (Win 9x/NT4)
ImagoWEB Fast image file viewer (Win 9x/NT4)
JPEG Optimiser Compress JPEGs (Win95/NT4)
Paint Shop Pro Essential graphics tool (Win 95/Win 3.x)
SPG Web Graphics Suite Excellent image editing suite of tools (Win 95)
IrfanView32 Comprehensive file viewer (Win 95)
GIF Animator Web animation tool (Win 95/NT)
GIF Animation Builder Create GIF animations (Win 95)
Graphics Converter Comprehensive file convertor tool (Mac)
Enhance High level image manipulation tool (Mac)
LightningDraw Web Build fast-loading graphics (Mac)
DeBabelizer Lite Popular graphic files conversion program (Mac)
GIFmation Top GIF animation creator/editor (Mac)

Multimedia Tools

Fractal Music Random midi composition (Win 9x)
Macromedia Fireworks Excellent animation tools (Win 9x/NT)
GoldWave Powerful sound editor (Win 95/NT3.51)
Apple QuickTime Latest version of this multimedia software (Win 95/NT4/Win 3.x/Mac)
SSEYO Koan Music Interactive music plug-in (Win 9x/Win 3.x)
Acid WAV Windows wav file editor (Win 9x/NT)
3D Webmaster Create 3D environments (Win 9x/NT4)
Quick Editor QuickTime video editor (Win 9x/NT4/Mac)
Cool Edit Powerful sound file editing application (Win 9x/NT/Win 3.x)
VisualShock Movie Movie editor (Win 95/NT4)
RealPlayer 5 New version of this audio and video player (Win 95/NT/Win 3.x/Mac)
Macromedia Flash Multimedia tool for the Web (Win 95/Mac)
Crescendo Audio player plug-in (Mac)
Animation Maker Web animation tool (Mac)
HVS Animator Lite Web animation tool (Mac)
MacZilla Movie viewer plug-in (Mac)
Moover QuickTime movies from graphics files (Mac)
D-SoundPRO Audio editing software (Mac)
SoundEffects Sound editing software (Mac)

Handy utilities

ExpPrint Print file and folders listings (Win 9x/NT)
HistoryKill Cover your Net tracks (Win 9x/NT)
Download Manager Tells you when new versions of software arrive (Win 9x)
Beyond Compare Keep tabs on differences in folders and files (Win 9x/NT)
VuePrint Multimedia viewer (Win 9x)
LinkBot Link verification and site management tool (Win 9x)
Adobe Acrobat Reader Read Acrobat files (Win 9.x/Mac)
Go!Zillav3 File download tools (Win 95/NT)
WS_FTP Pro Excellent FTP application (Win 95/NT)
WinZip Great archive file manager (Win 95/Win 3.x)
FileHound File download utility (Win 95)
Catch-UP Scanner Updating service (Win 95)
FPArchie Digs out files for you (Win 95)
DirectX5 Updated multimedia extensions for Windows (Win 95)
Vbrun5 VB runtime libraries for Windows (Win 95)
Stuffit Expander Archive unpacker (Mac)
Link Checker Eliminate dead links (Mac)
ColorSieve Colour information for any pixel (Mac)
Web Confidential Keep your passwords safe (Mac)
AutoClock Keeps your Mac clock accurate (Mac)
Download Deputy Set up batch downloads (Mac)
Insider Updates Gathers software updates (Mac)
Fetch Well-known file retriever (Mac)
FTP Client Shareware FTP tool (Mac)
Vicom FTP Client Transferring files between Mac and TCP/IP FTP servers (Mac)
Anarchie Most popular Mac FTP tool (Mac)



Email tools

Mailshot Broadcast your message by email (Win 9x)
Outlook Express Stationery Sample Pack Give your email messages a new look (Win 9x)
Eudora Light Email program (Win 95/Win3.x/Mac)
Spam Bait Creator Beat off those spammers (Win 9x)
Spam Be Gone! Plug-in for Eudora (Win 9x)
SpamShield Email filtering program (Win 9x)
Spam Exterminator Anti-spam tool (Win 95)
Bounce Spam Mail Returns spam to sender (Win 95)
FormConvert Sends form data as an email (Mac)
FastEmailCheck Checks for new mail from multiple accounts (Mac)
BeMailer Mass emailer (Mac)
Email Merge Do your own mailings (Mac)

Web building tools

Elated Web Kits Web site templates (all platforms)
1st Java Navigator Build Java navigation systems (Win 9x)
HomeSite Easy to use HTML editor (Win 95)
CSE HTML Validator Keep HTML in order (Win 9x/NT)
HotDog Excellent site building tool (Win 95/NT/3.x)
Table Of Contents Create your own content lists (Win 9x/NT4)
1 Cool Button Build Java buttons (Win 9x/NT4)
Power Mapper Create graphical maps of your site (Win 95)
CoffeeCup StyleSheet Maker Build your own cascading style sheets (Win 9x/NT4)
Alma Page Generator Pro Database to HTML utility (Win 95)
Web Hotspots Turn images into nifty imagemaps (Win 95)
MapEdit Another imagemap editor (Win 95/Win 3.x)
HTML Editor Straightforward HTML editor (Mac)
GoLive CyberStudio Easy to use HTML editor (Mac)
Myrmidon Turns Mac files into a Web page (Mac)
WebWeaver Popular Mac HTML editor (Mac)
BBEdit Classic Mac HTML editor (Mac)
MapEdit Create imagemaps easily (Mac)

Browsing utilties

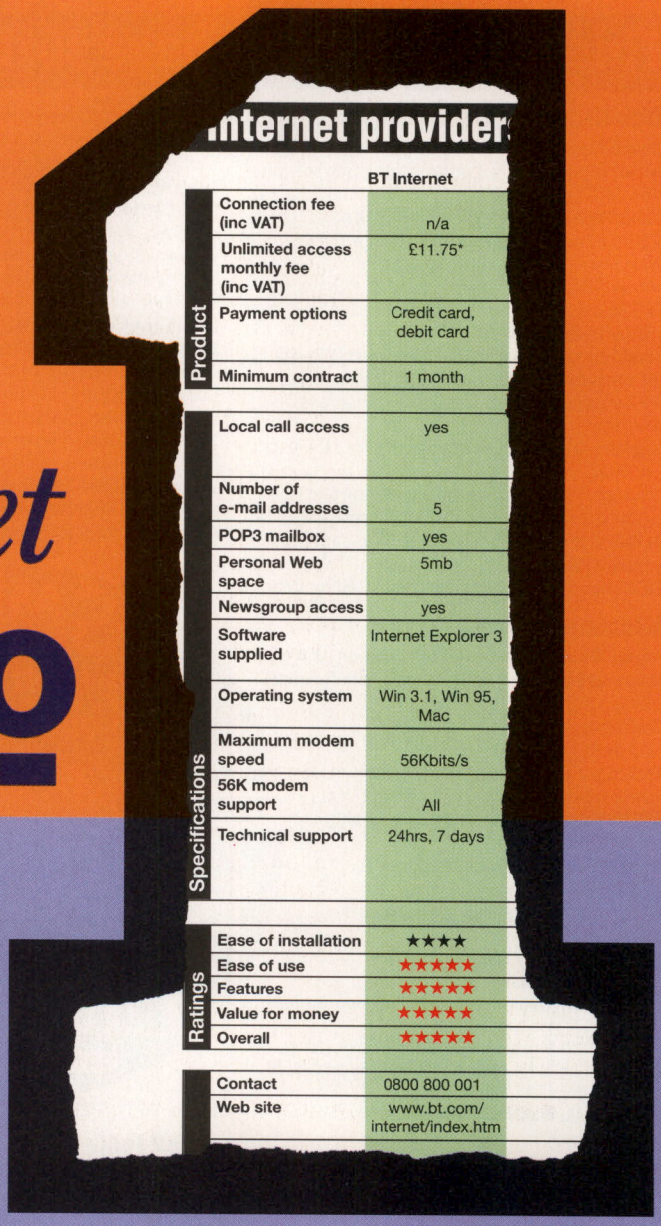
GIA Bookmarks Sort your URLs into a database (Win 9x/NT)
Copernic 98 Eases Web searches (Win 9x)
Intercatch Business Directory Directory of UK businesses (all platforms)
SurfSaver Archives Web pages (Win 9x/NT)
Opera Excellent Web browser (Win 9x/NT4/Win 3.x)
WebTicker Displays content as a Web ticker (Win 9x/NT4)
Netscape Communicator v4.0.5 Standard version of Communicator (Win 3.x/9.x/Mac)
Unmozify Speeds up browsing (Win 9x)
Internet Explorer v4.01 Microsoft's latest browser (Win 9x)
Internet Explorer PowerToys Unofficial add-ons for IE4 (Win 9x/Mac)
Phantom Builds searchable index of sites (Mac)
Autothenticate Automatically fills in online forms (Mac)
CyberViewer Keeps track of your browsing (Mac)
NetBots Digs out the Web content you want (Mac)
WebWhacker Speed up your browsing (Mac)

Bits'n'Pieces

Media Ring Internet Phone Internet telephony tool (Win 9x)
NetBanx NetStart Intro to e-commerce service (Win 9x)
Net CB CB for the Net (Win 9x/NT4)
PowWow Community software (Win 9x/NT)
VOG Chess Online gaming environment (Win 9x)
NetContact Allows hosts to communicate over a network (Win 9x/NT)
AbsoluteProtect Computer tracing system (Win 9x)
FixNews Plug-in for Netscape newsreader (Win 9x/NT)
HyperCam Captures screen actions and saves as AVI movie files (Win 9x/NT)
STD Decoder Database of UK and International phone codes (Win 9x)
ICQ Favourite chat software of the *Internet Magazine* staff (Win 95/NT 4/Win 3.x/Mac)
Snak Online chat application (Mac)
IChat Pager Instant messages (Mac)
MacIRC IRC software (Mac)
ChatNet Simple to use chat client (Mac)
AbbottChat One-to-one chat session (Mac)

BT

BT Internet voted No 1



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What PC? and Software magazine, June 1998 issue.

Quote ref INT 006

BBC Online loses head

Departure of BBC Online chief prompts a change tack for the Corporation's online ventures

BBC Online, the Internet flagship for the BBC's public service programming, is facing an uncertain future after the departure of its head, Ed Briffa.

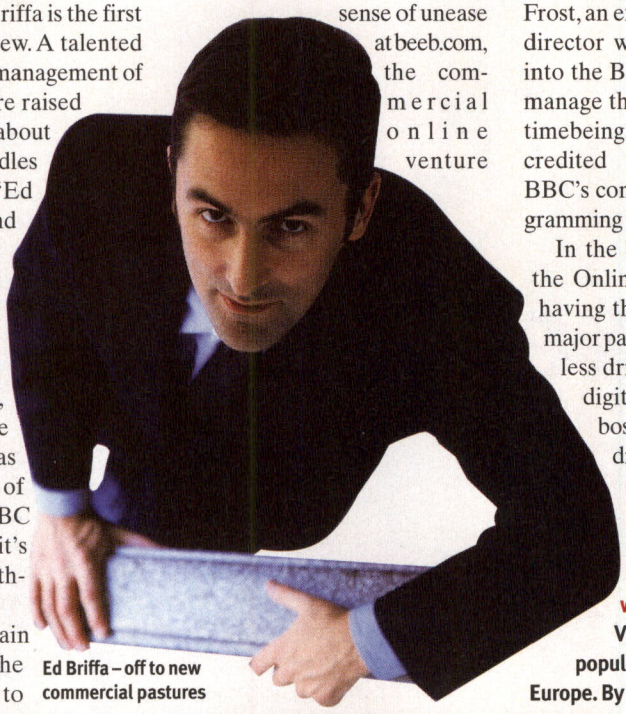
Briffa is a long-time BBC insider, and it's thought his move came about following the BBC's decision to move away from his programming model. Instead the BBC Web site will now become a more genre-based publication. The BBC could well be jumping on the portal bandwagon favoured by many other publishers.

Although the BBC is keen to play up the success of the site, it's clear from the low morale and the repositioning of the site that all is not well at BBC Online. The division gets one per cent of licence fee funds, and as such is one of the largest employers of Web professionals in the UK.

But the ample funding doesn't seem to have helped much. In last month's annual report, it was made clear that BBC Online was looking to justify its commitment to public service content and universal access. 'The BBC is reviewing its [BBC Online] structure to deliver even better value to the license payer. A major public consultation is underway to ensure that the BBC responds to the needs and online aspirations of license-payers.'

It seems that Briffa is the first victim of this review. A talented TV producer, his management of the Online venture raised serious questions about how the BBC handles new media. "Ed didn't understand the technology. They were building sites around the structure of the BBC. If he had been open to ideas, he could have learned." This was the savage view of one long time BBC employee, and it's been echoed by others.

Among the main criticisms of the BBC's approach to its online service has been replication of content and a poor strategy. With its Online effort, BBC News and Education running as independent divisions, there's little sharing of production costs. Furthermore, there's a general sense of unease at beeb.com, the commercial online venture launched jointly with ICL Fujitsu, after its crucial news and sport operations were brought back withint the non-commercial operation.



Ed Briffa – off to new commercial pastures

Although no successor to Briffa has yet been named, Mark Frost, an ex-AOL programming director who was only bought into the BBC this summer, will manage the Online unit for the timebeing. It's Frost who was credited with reversing the BBC's commitment to the programming model.

In the longer term, though, the Online division is seen as having the potential to play a major part in John Birt's relentless drive towards all things digital. As one ex-BBC boss chose to put it: "It's a dry run for digital interactive. The problem is that nobody knows how new media works effectively." Ouch!

www.bbc.co.uk
Viewed as the most popular media site in Europe. By itself, that is.

INDUSTRY

Big players in Real fallout

Real Networks and Microsoft in spat over streaming media software

It's 'watch your back' time round Microsoft way. Long-time buddies Bill Gates and RealNetworks boss Rob Glaser's relationship looks rocky now that Glaser has told US politicians that Microsoft is a bully.

And he should know. A hard-nosed business executive who spent 10 years at Microsoft, Glaser is now accusing Microsoft of playing dirty by not supporting the RealNetworks' standard in the Microsoft Media Player. And just when Gates is feeling the political pressure of the fallout from the DoJ decision, the last thing he needs is a rival taking complaints to Congress.

But the issue is not a simple one-to-one rivalry. Microsoft bought a chunk of RealNetworks a few years back, but Glaser wisely refused to give Gates & Co voting rights. Now Microsoft has decided to push its own streaming media software, NetPlayer, which, you'll be amazed to learn, comes free if you buy into Windows NT.

"They're trying to buy our market. We're happy to compete freely. Destruction is no way to compete," said Francois Mazoudier, marketing director of RealNetworks Europe. Microsoft, meanwhile, is blaming Glaser's moans on a beta version of the product, it hadn't time to evaluate. Expect a fight behind the bikesheds very soon.

www.real.com You want some?
www.microsoft.com
You think you're hard enough?

RealNetworks boss, Rob Glaser, is after his old mate Bill

OVERHEARD THIS MONTH IN THE US SENATE...
Rob Glaser, head of RealNetworks, in the US Senate "We welcome innovation and competition from Microsoft" **Just don't break our software...please**

Where now for domain names?

The judgement against One in a Million could mean corporates being favoured in domain name cases

Like night follows day, the High Court's decision to reject the One in a Million domain name appeal surprised no one except the two domain name hoarders who now face bankruptcy.

After Justice Alduos upheld last October's initial decision against Richard Conway and Jules Nicholson, the pranksters who control One in a Million, the pair were left staring at a likely legal bill somewhere north of £100,000. In what should prove an interesting, if time-consuming, final fling, the One in a Million guys are now considering a final appeal to the House of Lords.

"We've had letters from the plaintiffs' solicitors asking for the costs awarded in the first hearing – totalling £65,000. It looks like we'll be seeking to appeal in the House of Lords shortly," said Conway. Both Conway and Nicholson confirmed they have no income or assets to pay the outstanding costs from the first hearing, and were only able to pursue the case as their legal representatives worked without payment.

There will be little sympathy from the plaintiffs, though. Ladbrokes, Sainsburys, BT and Virgin brought the case after One in a Million registered a series of domain names similar to their commercial trading names.

Indeed, One in a Million had registered a wide variety of other names, including ones mirroring Burger King and *The Sunday Times*, a fact that the judge deemed significant when One in a Million claimed it didn't set out to make money from the registration of these names.

But in handing down his rejection of the appeal, Justice Alduos may have increased the confusion surrounding domain names. His ruling claimed that the very act of registering a domain name could break the trademark of a company. While there's little question that One in a Million were warehousing names, some legal experts believe that the ruling gives too much power to trademark holders and fear that personal users owning generic domain names could be pursued by businesses with similar trademark names. "The concern is that the Net isn't just for big companies, it's for everyone," commented Mark Elmslie, the head of Finers Intellectual Property Group, which represented One in a Million.

Yet at least one of the plaintiffs doesn't believe that One in a Million deserve the sympathy of the wider Net community. Keith Gymer, the legal advisor to BT Internet and Multimedia services told us, "BT made repeated offers to Conway and Nicholson to settle on the basis of appropriate undertakings. We offered to waive claims to costs and damages. These offers were refused and Conway and Nicholson stubbornly decided to pursue their misguided 'principles' in court."

Turn to page 22 for a full interview with the One in a Million guys

Time Line

DRINK

The Internet Engineering Task Force is holding its 42nd meeting on 28 August in Chicago, IL. The open forum for the Internet community expects the gurus to outnumber the suits, perhaps for the last time. Best session looks like the Shortest Path First debate – shortest path to the bar, we hope.
www.ieft.org

MICROSOFT

On 8 September, the bad boys from Redmond are back in front of the judge Yes, it's time for the Microsoft antitrust case to head back to court. With the marketing of Office 97 and Outlook Express dropped from the case, all attention is on the integration of IE4 and Windows. Claims that Microsoft tried to persuade Netscape to drop development of a Windows version of Navigator should also generate some interesting denials.

POCKETS

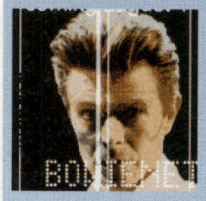
Motorola should finalise its purchase of TrueSynch, the developer of personal organisation software, Starfish, this month. TrueSynch is what makes the Rex personal organiser worth owning, and if Motorola uses it in its new mobile phones, it should have a really useful personal digital assistant on its hands. If handhelds are the future of Net access, these guys are running ahead of the pack.

News just in...

Following the **FBI** (www.fbi.gov) role model, plans for a site to highlight the

FEDERAL BUREAU OF INVESTIGATION

UK's most wanted... **Reuters** (www.reuters.com) and **ITN** (www.itn.co.uk) join forces to market their 96,000 hours of video archives... During the World Cup, **Soccernet** (www.soccernet.com) scored 65 million page impressions and generated more than $1 million of advertising revenue. What price an England vs. Scotland final?... That's small potatoes compared to **IBM's** Winter Olympics site, though. 634,716,480 hits and a place in the *Guinness Book of Records*... Joining the growing band of ISPs is **David Bowie** (www.davidbowie.com) ... Bowie's got a long way to go to match **AOL** though, which now has 450,000 users (www.aol.co.uk)... And **Cable & Wireless** wins the deal to provide AOL's Net backbone in the UK.... **BT** and **AT&T** announce $10 billion joint venture, but could be forced to sell chunks of capacity on their transatlantic routes... A divide by zero error in **Windows NT 4** cripples a US battleship... **Andrew Grove** (CEO of Intel) earned $52 million last year, while **Jim Barksdale** of Netscape earned the princely sum of $1... **US missile systems** mistook the moon for a Russian missile attack in the early 60's apparently www.coloradosprings.com/military/n111697.html... **Belgian Government employee** charged with downloading and distributing child porn over the Government's network...**Finns** spent more on mobile phone calls than on land-line phone calls last year – they're a strange lot...**IBM** launches risible e-business mark... **Budding musicians** should go to www.musicbank.net...**Buzzword Bingo**



Buzzword Bingo.com

launches three-word acronym (that's TLA) version www.BuzzwordBingo.com...Man who owns **Altavista** URL sells it to **Compaq** for $2bn. That's news to Compaq, apparently...**CompuServe** and **NetNames** sign deal for special price for domain name registrations... **Razorfish** acquisition trail grows...

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OVERHEARD THIS MONTH ON CNN...
"Janet Reno can to to heck" says new Microsoft President, Steve Ballmer, on the DOJ action. In a hard hitting interview, CNN then runs Microsoft's corporate video! Check out... http://cnnfn.com/hotstories/companies/9807/22/microsoft_pkg/index.htm

Our umpteenth time virgins dupe the press

The Our First Time Net jape caught out plenty of newspapers and fuelled yet more anti-Net feeling

My how we laughed. The seemingly innocent tale of Mike and Diane, two high school sweethearts keen to webcast their fumbling attempts to lose their virginity, erupted onto the Web last month. Ultimately shown to be a fake, the entire ludicrous episode gave the papers yet another excuse to berate Net users, and caught out some commentators who really should've known better.

To recap: the site goes live. Mike and Diane are meant to lose their cherries online in mid-August, inspired, or so the site claims, by watching the live birth of a baby online.

Quick to stir up publicity, the site also claims it's under pressure from the religious right and church groups. Strangely, no one points out that these so called 'pressures' were announced on the site as it went live. There must be some pretty well-informed pressure groups in the US.

A predictable media outrage quickly followed. And then the site was exposed as a hoax, just as the anti-Net bandwagon got into top gear.

A hacker, known only as MagicFX, broke into the Web server and placed a message blaming the instigator of the whole idea, Ken Tipton. Tipton had hoped to build up a massive audience for the site only to call off the actual act just before the dirty deed. This, he thought, would place him in the same sphere as HG Wells, whose *War of the Worlds* satire fooled a massive radio audience.

After the plan was exposed, Tipton took the high-minded route, claiming that it was all an attempt to foster safe sex attitudes and educate young Net users. A claim which was ever so slightly questioned when plans to charge for access to the site before the event were unveiled.

www.ourfirsttime.com Ooh, saucy

NET ACCESS

BT banks on cutting prices

BT slashes the price of leased lines

BT has cut the cost of leased lines. Massively. BT has reduced its charges on leased lines above 34Mb/s by up to 80 per cent. This means the cost of installing a standard high speed (155Mb per second and above) link will fall to roughly the current price of a 64Kb line.

This is a tremendous breakthrough for UK businesses and should put the wind up BT's rivals Energis and WorldCom. BT claims the price reduction is due to a new network infrastructure, but it may have come at a politically expedient time, with the DTI following up complaints about artificially high prices in the industry.

- And, in a completely unrelated move, BT has also unveiled a tie-up with Barclaycard. Card holders can trade in Profiles points awarded under the card's reward scheme for free access to BT's Internet Plan 180 for six months. Not groundbreaking, but better than the Virgin/Citibank free access deal launched with such a fanfare last month.

www.bt.com See, they do care

Research Focus: e-commerce

The latest Net research and what it means for you and your business. This month we focus on e-commerce in Europe

Why is Europe so far behind the States in the uptake of e-commerce? There are well documented barriers to e-commerce in Europe. There are the obvious ones, which include a fundamental lack of trust in secure transactions, growing fears about privacy and a reluctance to embrace new technologies. Then there are the added problems of a significantly smaller customer base in each country, higher online and hardware costs, diverse languages and (for the time being) different currencies to contend with.

"There's a sore need for more commitment from businesses and strong Government support in the form of economic policies"

Over the last month, there's been a whole batch of reports on the state of e-commerce in Europe. The first was published by the **Interactive Media in Retail Group** (IMRG) and concluded that Europe was too far behind the States and that immediate action is needed. Governments were advised to intervene and work with businesses and banks to iron out problems mitigating against electronic commerce.
http://195.40.125.18/ecwp/index.htm

Research group **Forrester** also notes a European reluctance to embrace online commerce. While the number of US Net users is expected to rise to 40 per cent of the population by the year 2000, in Europe only 13 per cent of the population are expected to be online. The 2001 per capita trade over the Net figures are projected at $2,101 in the US and $1,217 in Europe. This represents 0.9 per cent of European GDP in comparison to 2.7 per cent of US GDP. If these predictions are correct, e-commerce will be three times more important to the US economy.
www.forrester.com/press/pressrel/980626.htm

On a more positive note, a study by **MORI** found that nearly 25 per cent of those companies that have Web sites in Europe are making a profit from online commerce. In the study, almost half of the 900 business directors, from all spectrums of business, said they're confident e-commerce is the best option for the future of their business. The directors were polled from Germany, Italy, Spain, The Netherlands, France and the UK. Of those businesses which have Internet access, 46 per cent in Spain are conducting commerce online, 33 per cent in France, 20 per cent in Germany, while the remaining three countries were deemed to be progressing at a much slower level. Sixty per cent of businesses with online access said they expect to do more business online in the future. The majority agreed that at least 30 per cent of business should be transacted on the Internet in the future.

That said, it's hard to deny that Europe has realised that the Internet is integral to its future economic development. But there's a sore need for more commitment from businesses and strong Government support in the form of economic policies and tax relief incentives.

This research brief is produced by NUA, a Dublin-based Internet and Web consultancy. See www.nua.ie

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What future Dial?

50,000 Pipex Dial subscribers could face an uncertain future

Just when UUnet seems set on expanding its Dial access line, ex-Pipex supremo Peter Dawe has warned the parent company, WorldCom, against disposing with the division.

UUnet has expanded its Dial product to include multi-Dial, a five-user access package targeted at the small business market. Although a natural extension for a dial-up product, the one-time Pipex head believes this may be the thin end of the wedge.

Commenting on industry rumour that WorldCom was trying to sell Dial, Dawe was blunt. "I think they're mad. Companies looking to go on the Net start with a dial-up account. When they get a leased line they stay with the same vendor. That's why we started Dial," he reasoned. Dawe also believes the unit could rake in more money now Worldcom has a telco licence. UUnet will only confirm that there have been 'approaches' and that a possible sale of the unit has been 'explored.'

There are good reasons for a sale. UUnet provides the network infrastructure for several leading ISPs, and may feel that Dial, with around 50,000 subscribers, is competing against itself.. And, as Dawe was quick to point out, "Internet companies are selling at multiples of turnover. It's a great time to sell." BT pointed to the arrival of its BT Click dial-up service as another reason to sell. "It wouldn't surprise me, as there's consolidation in the market," said Neil MacDonald, head of BT's Internet services.

But industry rumour suggests UUNet wants £70 per subscriber, making Dial a £3.5m proposition. This price tag would deter many investors, and the key may be whether network provision stays with WorldCom. This would surely put off many outfits with their own network (ahem, BT). But as one Dial insider put it, "at £70 per seat, no one will buy it."

www.pipex.com

STANDARDS WATCH

The Internet God is dead! Long live the board of directors

The Internet is a figment of our imagination, conjured up from the shared online experience of the users of tens of millions of computers interconnected by hundreds of thousands of networks. It has no centre. It has no ruler. But it does have a God – or at least it does until 30 September.

His name is Jon Postel. He's a computer scientist working at the Information Sciences Institute at the University of Southern California, and among other things he runs the Internet Assigned Numbers Authority (IANA) at **www.iana.org**. The IANA is the most important body on the Internet, because it gives out the numbers that the computers use. It can do this because the US Department of Defense told it to do so and, up until now, everyone else has just gone along with it because it makes sense to have a single body issuing the numbers. But this could be about to change.

The IANA does three things: it allocates IP addresses, the 32-bit numbers (64-bit if you've moved to IP v6) that uniquely identify networks and computers on the Internet. It gives out port numbers and other Internet numbers for network services. And it runs the Domain Name System (DNS) that gives every unique host and organisation a name that can be mapped to an IP address.

But all is about to change at the IANA, largely as a result of a US Government policy document published in June that called for a total overhaul of the way the Net is administered, taking control away from the Government. The US wants the new structure in place by 30 September, but no one can quite work out who will run it and how it will work. At last month's Internet Society shindig in Geneva, scores of technical, legal and political types gathered to debate these issues.

At this point, Jon Postel announced plans for a 'new IANA', a move that would mean him standing down from his current job. He proposed the setting up of a non-profit company incorporated in the US, dedicated to 'preserving the central co-ordinating functions of the Internet for the global good'.

The new IANA will have an international board of directors and will run on a commercial basis without US Government mandate or interference. It will try to gain support from all Internet 'stakeholders' – if you don't get everyone working together then you don't have any Internet at all. It will control the central standards that define the Internet – the ones that make connectivity possible. And it will mark the end of the old-style academic Internet, when everything was run by bearded men in sandals who worked for the good of the network as a whole. With the Internet at the heart of the 'digital nervous system' of the world economy, it doesn't make sense to have a god – you need a board of directors.

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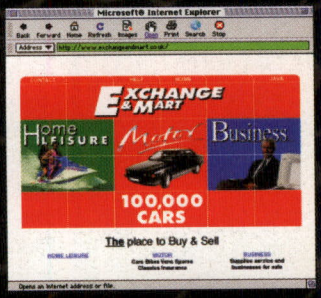

The one-stop shop for buying and selling online

OVERHEARD THIS MONTH FROM SELF-STYLED NET GURU ESTHER DYSON...
When asked "What is your greatest professional achievement?", she replied "the ability to keep finding things that are new and worthwhile, and to explain them to others in order to get leverage in fostering their development."
So that's taking other people's ideas, explaining them to people and then taking the credit

Time Line

FAT CABLE

If you're fed up waiting for Web pages to load – a victim of Web rage, perhaps – then maybe it's time to emigrate. Singapore looks nice, if you don't mind the lack of democracy. Local ISP Pacific Internet (www.pacific.net.sg) has just increased its bandwidth to the US to 64Mbits per second for a mere 150,000 subscribers.

APPLE

Life just got better for the Mac user, with Mac OS 8.5 available in the shops – assuming Steve Jobs kept his promise. After all the uncertainty about Apple's strategy, it's nice to see them sticking to a plan for a whole nine months. The main bonus for Net users will be a tool that can access several search engines from one dialog box.
www.apple.com

EDUCATE

After all the White Papers and pilot projects, the National Grid for Learning should go live at the start of the school autumn term. Check out
www.ngfl.gov.uk

BT

If it can get around OFTEL and fight off the ISPA, BT should roll out its Click service around the beginning of October. Offering dial-up IP access to the Internet – but no email, Web space or tech support – for a penny a minute, it's a bargain service for experienced users.
www.bt.com

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This month's Net conferences, courses and seminars...

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ECTS

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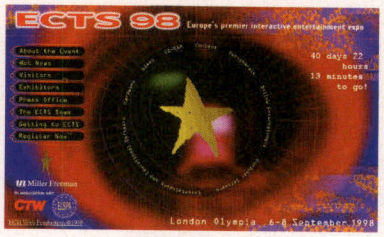

Internet 98

This show will have areas devoted to mobile working, e-commerce and intranets. Among the ISPs airing their wares you'll find U-Net, GX Networks and Mistral Internet. And don't forget to visit the Web Professional seminars hosted by your very own *Internet Magazine*.

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www.internet98.co.uk

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training-services@pira.co.uk
www.pira.co.uk

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13-15 October
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Olympia, London
enquiries@e-commerceshow.com
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9 November
(0171) 505 8185
Olympia Conference Centre
sarahp@finance.emap.co.uk
http://insurancenet98.insuranceage.com

Bug of the month – Potential bugs in software written in C

The big debate at the moment is not about a particular bug, but about the way we write programs for the Internet. Early in July a serious hole was discovered in the IMAP daemon (a mail handling service) supplied by the University of Washington as part of the Pine mail software. The hole lets a hacker get root access on a server running the IMAP deamon. The BUGTRAQ mailing list even has a sample of the code you need to exploit the hole.
www.washington.edu/pine

The problem is an old one – a poorly coded routine reads user input without checking the size of the data it's given, this means a user can generate a buffer overflow and put arbitrary data on the computer's stack. This is a recurring problem for those people writing network software in C – it recurs because C comes with a set of string handling routines that don't check size.

As a result, an argument is raging over whether we should use C at all, because it doesn't do the checking that C++, Java, Ada and other languages do. It's certainly a problem, especially because so many people know C and use it – including the writers of a lot of shareware. And if you don't see someone's source code, how do you know their software is safe?

Meanwhile, the obligatory Microsoft IIS scare story concerns a hole in the Remote Data Service, an IIS 4.0 add-on. RDS provides 'controlled Internet access to remote data resources', but unfortunately as shipped it will pass on requests to any database management system linked to your Web server. This means that a remote user who knows the name, IP address, database name and logon name/password can query your databases from anywhere on the Internet. While it requires a lot of internal knowledge, it's not that difficult to find the details of a database – and if it happens to store your customer details you could be in big trouble. You'll find the bug fix, at
www.microsoft.com/security

Recognising that many online users don't have the time or the inclination to visit the Microsoft Web site every day just in case there's a new patch, the company has done the decent thing and set up the Microsoft Product Security Notification Service mailing list. See www.eu.microsoft.com/security
It's worth it for the laughs, even if you're a pure Mac/Unix user!

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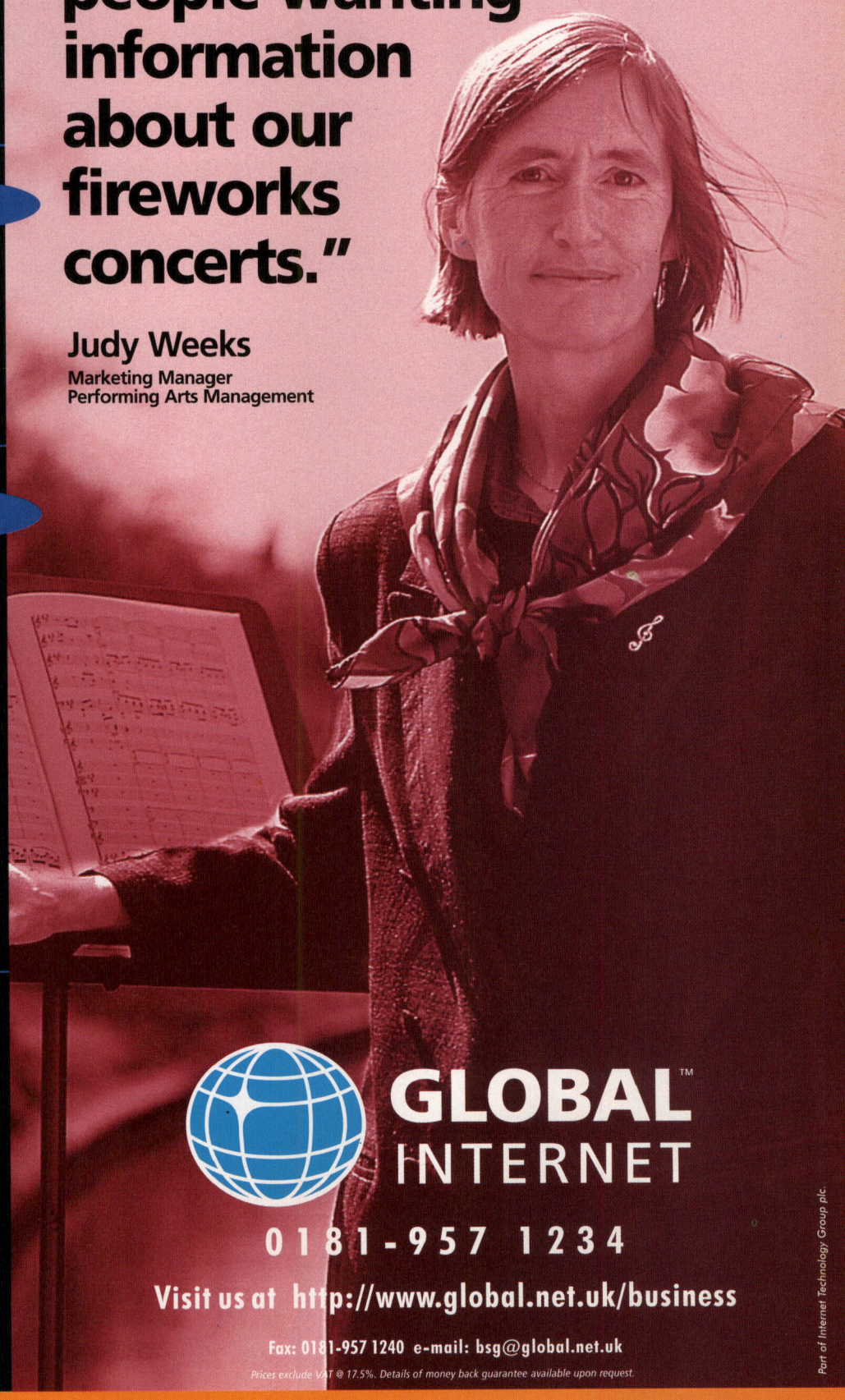

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Demon	✗	✗	✓	15	£132.50	£132.50	£132.50	£132.50
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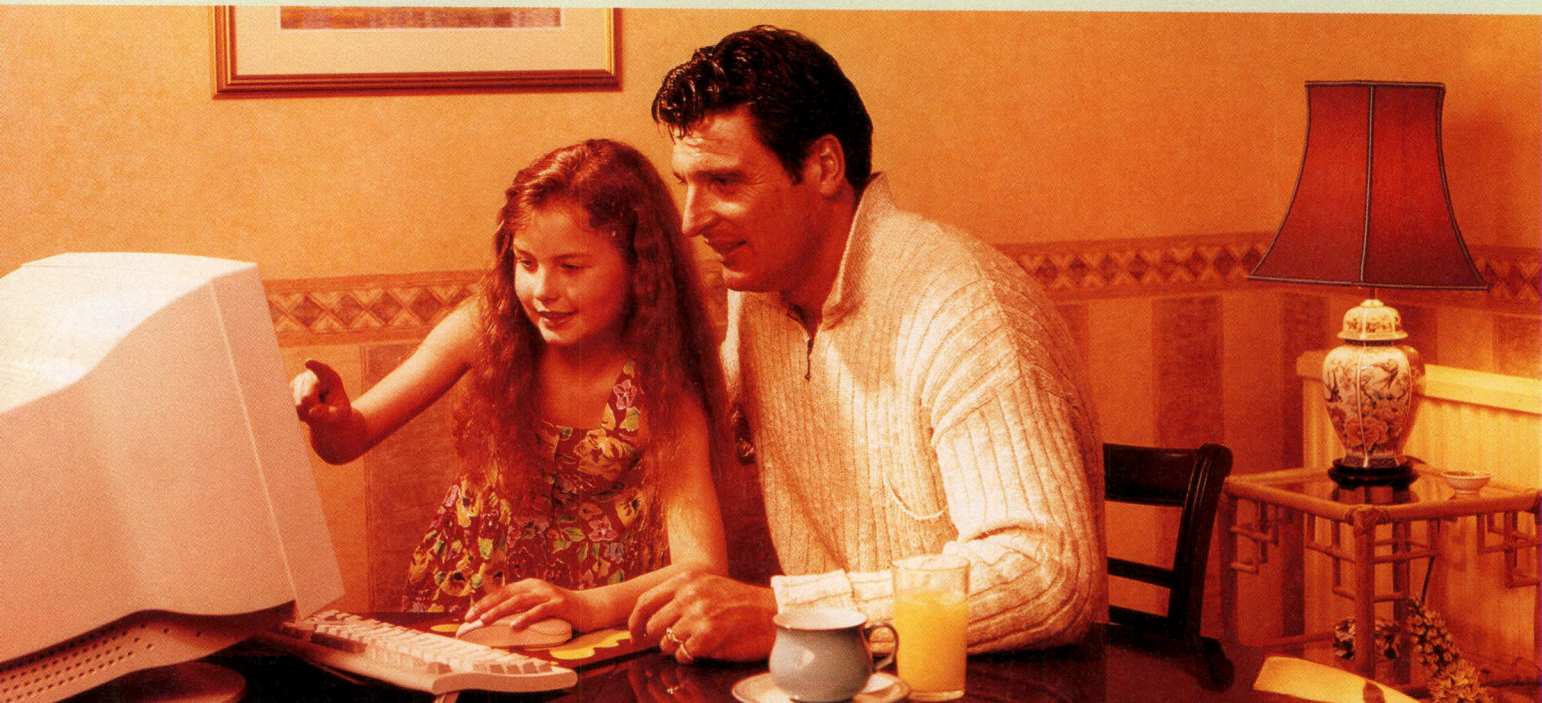

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Silly boys

Jules Nicholson and Richard Conway, One in a Million

Internet freedom pioneers or mischievous con artists? As the One in a Million founders face bankruptcy and consider a final appeal to the House of Lords, Mike Bracken examines the case that could revolutionise Internet names

How silly are Jules Nicholson and Richard Conway? Very. So said Lord Justice Aldous when he turned down their appeal against last October's domain name ruling which found them guilty of breaking the trademarks of BT, Virgin, Sainsbury, Ladbrokes and Marks & Spencer. Even their own defence team admits they're silly – a part of their appeal argument read, "the truth is that the defendants are two rather silly young men".

And it's not a definition they disagree with. "It means silly, as in having a good sense of humour, rather than just idiots. He admits we have some intelligence," giggles Conway. But just how silly are they? Let's say you're due up in the High Court, charged with registering the domain names of several leading UK companies, each of whom has masses of lawyers and seemingly endless funds for legal spats. You have no job, no money and, quite frankly, no hope of winning the case. So for a laugh you go and register the domain name **www.highcourt.com**. Very silly indeed.

All a bit of a laugh really, until the judge's decision comes in. All of a sudden you owe the plaintiffs £65,000 in legal costs. Now it's not so funny. So you hit on a plan. You'll paint yourself as Net freedom fighters, battling against the corporate tyrants who threaten to remove the Net from its wild-west background and want to impose dull business merits, like trademarks and, copyright. You'll court the press, who, you guess, love to knock the corporates. Everyone, you think, loves an underdog. By the time the appeal hearing comes around, you're quietly confident.

It's Wednesday, 22 July, 1998. Jules and Richard talk eagerly about tomorrow's appeal decision. It's like interviewing twins. When one starts a sentence, the other finishes it. They may be silly, but they're convinced they have a case, and they're confident that the Net should back them, which is no surprise...

Aa an electronics and business management student at York University, Richard Conway had little to distract him from the emerging Internet. Indeed, such was his enthusiasm for the Net that he started up a business selling Orange mobile phones via the Net. Although not a roaring success, it did mean that he met Jules Nicholson who was, bizarrely, trying to grow a similar business. Unlike their fellow students, the pair eschewed typical undergraduate hedonism ("We don't go out gambling, smoking or taking drugs.") and decided instead to register domain names.

At the time, Nominet had just changed its naming procedure, allowing anyone to register names for £100 for two years. The boys spent their allowances registering names. Asking them why provokes the first of a series of earnest yet inconsistent replies. "It's just a bit of fun. These companies had seven years to register them before us and just didn't do it. They're available on a first come, first served basis, so it's clear they didn't bother. So we did, on the off chance that some of them might want to buy them, but not thinking

Photographed in London by **Guy Hills**

'hey, they're all going to come running to us and say here's £2 million'. It was a big gamble, a one in a million gamble." At this point it's easy to believe them. Then Conway adds: "We never expected to make money. We never expected that what we were doing was unlawful or illegal."

Which is not the impression Burger King got after they received Conway's letter early last year asking them for a cool £25,000 in return for the BurgerKing.co.uk domain name. I put this to Conway. "I registered the name and then their IT director phoned me and said to me I've been asked to register BurgerKing.co.uk and I see it's been registered to you. He asked 'Why did you register it and would you sell?' I said 'Possibly'. He said, 'Put something down in writing and let me know, and also in the letter will you let me know what you will do with it if BurgerKing doesn't buy it.' I wrote to him, saying that I'd sell it for a ridiculous amount of money – £25,000 it was. I never expected him to come running to me and say thanks. You expect [the price negotiations] to come down. If he had been pleasant, I would have taken very little for it. There was no negotiation. There was no small offer. There was no threat from me to sell it to anyone else."

Such is the One in a Million logic. It's a difficult argument – claiming not to register names for profit but then asking for £25,000. You can almost hear them complaining: 'they phoned us first, so it's all their fault. As far as Jules and Richard see it, this was an opening gambit, a way to make a few quid, with no malice involved.

"This is a significant victory for major brands"

Keith Gymer, BT's legal man

Yet business, and the law, doesn't see things that way. Many would see this as an implicit threat, but not the boys. They think this sort of reaction is, well, silly. I asked them what they planned to do with the name. "If someone else came along – and there are other ways of using the name without doing anything wrong – then why shouldn't I sell it to them. It's something I've bought. Why shouldn't McDonalds buy it to use for comparative advertising."

Well, there are loads of reasons, such as trademark abuse, otherwise known as passing-off. But by this time the boys were on a head-on collision course with the domain name system.

With half a dozen leading names already under their belt, the boys began to receive attention from the trademark holders. This is the One in a Million side of the story. "Unknown to us they had set a private investigator onto us. They phoned up in regard to BT.org. This gentleman said my boss is called Bert Turnbull or something and he would like this name for his own use. So we opened negotiations and I think we agreed about £1K. Then he suddenly disappeared. Then we heard from BT saying it infringes trademark. We said it doesn't as it was a .org name. We said if you were prepared to pay what this chap had offered then we would sell."

Maybe it was £1,000. But in court, it was revealed that the boys asked BT for £4,700. By this time BT had lost all patience, and they and fellow plaintiffs served papers on the boys. The day before, the boys had offered to hand over the BT.org name if BT handed over the required fee to the Princess Diana memorial fund. "Either way, it's still blackmail," claims Keith Gymer, BT's Internet division's legal advisor. The legal papers arrived the next day. The silly game was turning serious.

The court hearing was brief. The passing off and trademark infringements were argued, and although the plaintiffs accepted that the boys hadn't actually used the names, the very act of hoarding them (warehousing) was enough to find against them. And worse, costs were awarded against the two. That's £65,000 owed to the corporates. The boys found that silly, as did their solicitors, who successfully won leave to appeal. As Conway puts it, "The judge found that we hadn't passed off and we hadn't infringed their trademark, but that it could happen, and if the court thinks there's a sufficient threat, then they can grant injunctions, which is what they did. This is what we're in dispute over."

This is a very strange reading of the judge's findings, but the boys had lived to fight another day. That day was Thursday, 23 July, 1998...

In a long-winded decision, the appeal court ruled against the boys. First, this meant that the total costs would probably end up somewhere north of £150,000. And it also meant that the 'act of registration' constitutes passing-off,' a monumental judgement in the UK Internet scene. This seemed very unfair to Jules and Richard. "The companies know we have no assets," moaned Jules. They now have to hope that BT, and the rest of the plaintiffs, don't make them bankrupt or try to enforce the payment of costs as they make their way in the world.

And yet, there's still a sense of injustice on their part, a sense that they did nothing wrong. Throughout this soap opera, both boys have stressed to me how they would have acted differently if only the plaintiffs had acted 'nicely.' If only they had been more polite and courteous (and, I would suggest, less heavy-handed and more indulgent of silliness). As the boys now know, the wild west of the Net is long gone, and hard-nosed business ethics prevail. And big companies think one thing about individuals who get in their way. They think they're silly. im

Where do we go from here?

They may be silly boys, but the One in a Million case has raised a lot of issues about domain naming and the rights of individuals and businesses. Below we list some of the more illuminating attitudes towards the decision.

- **Dr Willie Black of Nominet** was satisfied that the decision would not force the UK's naming agency to be accountable (and therefore prosecutable) for names which break trademark law. "Individual cases will still have to be argued, either commercially or in court. This case was about warehousing." Some Nominet members weren't so sure though, such as **Matthew Hare from Community Internet**. "Everyone sees Nominet as someone to sue, so we've put aside a substantial fund."
- Many welcomed the decision, none more so than **Keith Gymer, BT's legal man** on the case. "This is a significant victory for major brands. It has to be judged in the light of the fact that they registered three other British Telecom names. It would be wrong for Netties [sic] to blow this up and say it's a special case. You have to look at the facts."
- Yet **Mark Elmslie, the Head of Finers Intellectual Property Group** disagreed and expressed concern. "The findings in relation to passing-off make it clear that anyone who placed on the domain name register what the court described as a 'distinctive name' (using the example of marksandspencer.co.uk) was liable for passing off, and this has obvious implications for the Internet community at large."

On the boy's conduct, we leave the last word to Gymer: "I suspect they woke up to the realisation that their claims looked like the 'ransom' demands they effectively were, and so they tried to put themselves in a more favourable light by repeating the offer to relinquish the name for a 'voluntary' donation of £4,700 to the Princess Diana Memorial Fund, at the same time demanding evidence that this 'voluntary' donation had been made. To the uncritical eye that may seem a reasonable offer, but taken in context and given their past conduct it still remained a ransom demand. And ransom demands don't become legal just because you ask for the money to be paid to a charity!"

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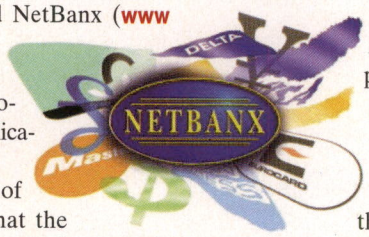
After reading the article 'Bank claims Net ignorance' I have to ask are any banks really genned up on the Net? I've just had a depressing experience with Barclays. When we tried to start an Internet business, our account manager had no idea about trading on the Net. The Barclays Merchant Services people were equally ignorant of the bank's policy towards Net businesses and didn't even know the bank had an e-commerce department!

After being rejected twice by them because we were 'too high risk' (which cost us almost four months of trading) we decided to try another bank. We went to the Royal Bank of Scotland, which was keen to help. Unfortunately they couldn't, so we looked for a third party to help us out. In the end we found NetBanx (**www.netbanx.com**) which is fantastic. They processed our application in 10 days!



The moral of the story is that the banks in this country, despite their attempts to modernize, are still way behind the times.

Name and address witheld

Alex Paterson, press officer for Barclays Bank replies: Far from being behind the times with Net commerce, Barclays Merchant Services was the first acquirer of e-commerce card payments across the Internet. BMS has opened a new sales channel for retailers and businesses by offering online processing. BMS is striving to achieve the right level of service for Internet commerce and welcome those who are trying to set themselves up as Internet traders.

Get with the program

I've been reading the correspondence about PC banking with interest. I only have experience of one company – First Direct. I've been banking with First Direct for several years. Its service is excellent and the staff in the PC banking department are eager to help, but, unfortunately, they don't seem to have much technical knowledge.

I waited nearly three weeks for the software, only to discover it wouldn't support Navigator. I've had various excuses from First Direct for this. The first was that it needed Java, and Navigator doesn't support Java! I put them right on that, and I was then told that ISPs usually only support one browser anyway. Well, I confess, I only have experience of Zetnet, with whom I can use whatever browser I like, but I'm sure other ISPs are equally accomodating. I now have an assurance from First Direct that it'll have software available in August that supports Netscape.

But I've got IE4 on my computer. So I got on using the First Direct software. While trying to make a payment, the whole system seized up. A call to the help desk revealed that their software doesn't even support IE 4! I was supposed to be using IE 3. I wonder if First Direct will get their software to support IE 4 and avigator 4 before version 5 of both products comes out.

Paul Taylor
pftaylor@zetnet.co.uk

Tim Basford, First Direct's project manager for PC banking, told us: First Direct is committed to providing a multi-browser solution for PC banking. The recommended browser is IE 3.02. When IE 4 was introduced, First Direct validated its software to run with it, but on occasion it will freeze.

First Direct is working with our development partner, ICL, to support both IE 4 and Navigator 4. This will be available by the end of September.

The end of ISPs as we know them?

As a service provider, I should apparently be 'quaking in my routers' following the announcement of the new BT pay-as-you-go service (*Internet Magazine*, July issue). In reality, I don't see the service presenting a threat to our business.

BT Click may look revolutionary at first glance, and may well fill a gap in the ISP market. Some ISPs may be threatened, but I disagree that this could be the end of ISPs as we know them.

For a start, BT Click is a simple Internet gateway service. It provides none of the added services such as email, newsfeeds and free Web space other ISPs offer for their flat monthly rate. For the majority of Net users, this will be insufficient. The service is evidently targeted at new or infrequent users. For them, it may appear a welcome proposition. What hasn't been considered is the amount of support this type of user requires – and which, if lacking could put them off the Web forever.

Another concern is that, with no registration, end-users won't be accountable to the ISP. This could result in a dramatic increase in illicit Net activity, such as spamming and the posting of pornographic material.

For the average Net user (who spends 15-25 hours a month

Star Letter

Two lines for the speed of one

I've been conned, I recently just had to get a second line installed by BT to cope with my thirst for trying to kickstart a business using the Internet. BT installed a second line and all seemed well until I tried to log on and my whole system just crawled along. I could no longer connect at any speed above 28,800bps. After numerous calls to BT I finally got an engineer who explained to me that despite my order specifying that my second line was for a modem they have installed a DAX on my main line. A DAX is something that splits your main line into two, effectively doubling the numbers it can carry by halving your connection speed.

I was livid, especially as I was used to getting good connection speeds of 48Kbps plus and have even experienced 56K on my USR Courier at times. I made an official complaint to BT and was told that they now have a policy not to remove DAXs from customer lines, even where there's a modem attached. It was strange that this policy change happened at the same time as BT halved its ISDN connection charge.

I for one have had enough of BT, and as soon as Anglia Cable (go on guys) get outside my door, I intend to have them supply all my lines.

Martyn Porter

Gail Robinson replies: It wouldn't be a proper letters page if we didn't give BT grief. We asked BT for an explanaiton, and we're still awaiting a response. We'll keep you posted.

online) this service will certainly not offer savings. Add all the value-added services you get from a traditional ISP, and there's really no competition.

Michael Holland
Managing Director
Prestel On-line

Geography skills shortage

A bit of feedback on your Best Local Content spotlight (July issue, page 63). First, I know you Londoners find 'up north' a bit of a mystery, but calling Manchester a 'Merseyside city' is taking it a bit far!

That aside, may I simply say how welcome I found this addition to your excellent publication and I hope it will become a regular feature. As mentioned in the article – albeit a tad patronisingly – local content is indeed vital to the development of the Net.

But I was rather intrigued by your championing of the local authority's role in compiling a local page's content – you referred to their provision of 'right' and 'relevant' information, and declared that their backing was vital. Is this inevitably the case? You say yourselves that few local sites address the needs of local people, but I find this is particularly so with council-run or sponsored sites, where time after time one comes across the same picture-postcard images and glowing descriptions

Take my own home town of Chester. Its 'official' Net presence is the rather dull Chester information Network (**www.chester.org**). Unsurprisingly, there's no coverage of the city's problems. Little effort has been made to involve interested organisations or individuals. It's a classic local authority Web site.

Steve Howe
knowhowe@enterprise.net

Thanks for including Virtual Manchester (**www.manchester.com**) in your July issue. Just one point though... you say "Virtual Manchester is a great guide to the 'Merseyside City'".

We believe that as the UK gets drawn in to the dream/nightmare of the European Union, our sense of national identity is slowly being eroded. Something has to fill this vacuum, for human beings need a sense of identity. Perhaps Europe will – without realising – end up as a series of cities and towns all competing with each other for inward investment, tourism and so on. We at XTML believe that city sites are set to become extremely important on the Web.

Peter Stewart
Managing Director
XTML Creative Ltd

The author of that piece, Garret Keogh, replies: Despite my Irish background, my extensive knowledge of English geography does extend to the rivers of Northern England. I am fully aware of the Mersey and it's location. Shame the *Internet Magazine* subbing team didn't go to the same geography class! (*OK, we apologise – Ed*)

As for local sites, I do see it as a key growth area in online content. I take on board the fact that all official local authority sites may not be up to scratch. However the local authority does play a vital role in supplying relevant content. However they do have to work with local design companies and Internet users.

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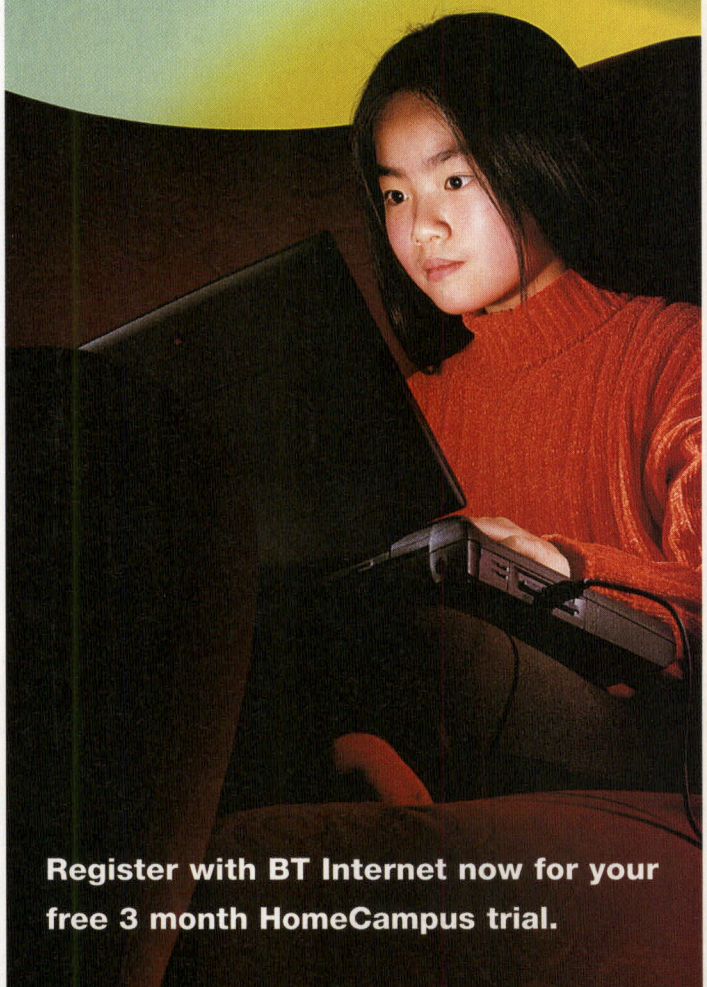

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Doctor in the mouse

As the cash-strapped NHS struggles with the spiralling cost of healthcare, Paul Lavin gets clicking and decides the future of the Health Service is online

Just to prove it could be done, I ordered some Viagra over the Net. It was strictly professional matter of research, honest. I was expecting to write a story about how irresponsible and dangerous it was... but I was wrong.

Not about Viagra – it seems to work as advertised and, considering the millions of happy patients, a mere score of corpses seem to bear out Pfizer's confidence in its safety and efficacy. No, I was wrong about how sleazy and unprofessional 'cyberdoctors' were. The site (www.cyberdocs.com) and the medical people behind it were a class act. It started me thinking about my medical experiences in real space.

Phil Hammond, the media medic, says a large proportion of the people seen in surgeries have self limiting maladies – they're going to get better or die no matter what the doctor sees, says or prescribes.

If the is true, it adds up to a lamentable and avoidable waste of time and money. Getting an appointment with your GP for anything less than arterial bleeding can take a week.

But when I do finally get to the surgery, the NHS can't afford for my GP to settle into his leather chair for a good chinwag and a comprehensive health discussion. And I'm sure he knows his stuff, but he is, after all, a generalist in continually changing field.

What a contrast to my consultation with the cyberdoctor. I walked away from the keyboard feeling well examined and cared for. I felt like I'd had a better consultation than I'd had from any NHS doctor in the last fifteen years.

It did cost $50, which I suspect is a bit more than my quack gets for feeling my pulse and listening to my chest rattle. And I did have to lie to get the little blue pills...

When you go for a medical consultation online, you have to fill out a long questionnaire about your general health and what is wrong with you.

"The NHS needs to clasp Web technology to its underfunded chest, pronto."

There's a bit of computer screening – unless you have the right answers, you don't get into the online chat session with the doctor. With some judicious falsehoods, I managed to get through, and we chatted for some time, we even swapped some jokes. It wasn't a medical artificial intelligence program.

The doctor who 'saw' me was Dr Adam. But was it Adam the typing daschund? Not knowing who you are being advised by may be a shortcoming to the current practice of online medicine. But rather than banning it as dangerous, it needs to be supported, licensed and made totally professional.

The NHS needs to clasp Web technology to its underfunded chest, pronto, before even its most fervent supporters tire of the closures, neglected old folks, and sick kids shuttled between hospitals in search of a bed. What I suggest is that patients have to go through an online screening process before they can get an appointment with their GP, and for some illnesses there could be automated prescriptions. And for heaven's sake, link up the pharmacies to the system – put an end to traipsing around with a bit of paper with a physician's scrawl to get a prescribed drugs. Secure SSL links would be good enough for most prescriptions.

It won't happen overnight – the world isn't yet wired enough for it to work this year. At first, you could just give priority to people who have been screened. Access could be from a home or work browser or... through MediWeb kiosks(© Paul Lavin, 1998). These could be in libraries, train stations, schools, city halls, surgeries, clinics, surgeries and, even in Boots the Chemist.

The kiosks (and browsers) could also dispense the health information currently found in stale leaflets. Why not go further and put lists of chemists, surgeries, clinics and hospitals with maps? How about a list of after-hours duty chemists?

The whole scheme could be supported by ads on the various Web pages or even the lottery. The proceeds would certainly go to a cause that would cause fewer ruckuses than refurbishing an opera house or buying dead politicians' diaries from their rich relatives.

I hear the NHS is onto the promise of 'teleconsulting' but, in typical fashion, they're going for big PCs with video cameras and the whole nine yards instead of using a large number of Network Computer-based kiosks that won't cost the earth. I'm sure the video feed could be useful but, hey, let's get the program under way and then make it better.

To make this thing work we need to get the medical profession to see the light. Doctors, in my experience, are hopeless with computers and the Net. Until we get them using the Web, the great ideas to improve medical care and save the NHS will just be coming from guys like me who know their technology, but don't know their ulna from their gluteus maximus.

Paul Lavin (plavin@caversham.uk-win.net) is a IT consultant and journalist writing on the Internet and related issues

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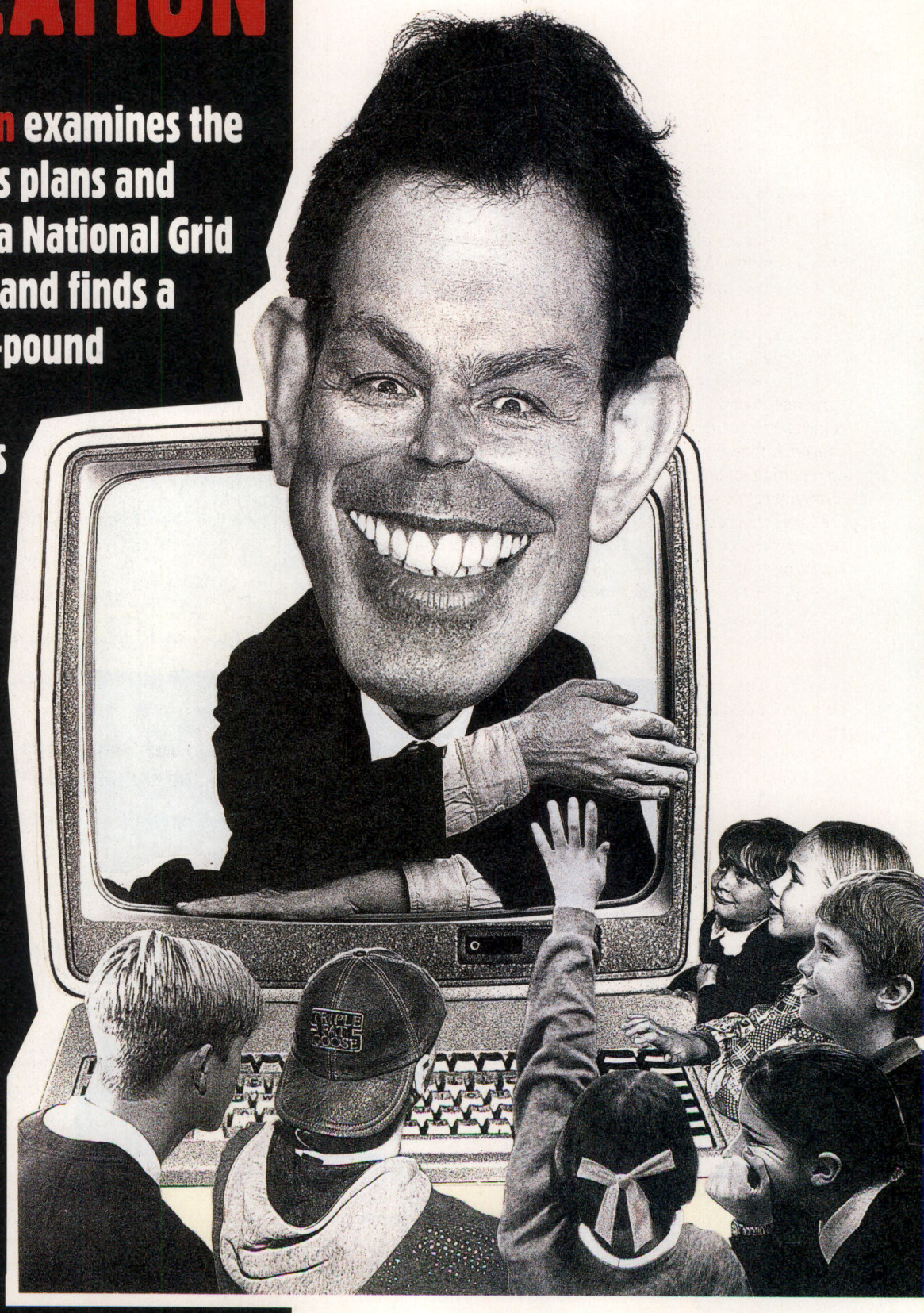
Bill Thompson examines the Government's plans and promises for a National Grid for Learning, and finds a multimillion-pound portal that could outclass even Netscape's NetCenter... if the schools can reach it



We live in a learning society – ask any Labour MP. The Government is committed to education (and education... and education), and a stream of White Papers and Green Papers and task forces and special grants testifies to the seriousness with which Tony Blair and his fellow Ministers take the whole issue of how to improve standards in schools.

They're desperate to make sure that every child (and every adult – let's not forget lifelong learning) benefits from their time at school, and they think that computers are the way to make it all happen. Although money is being spent on repairing school buildings and performance related pay for teachers, the Big Idea at the centre of Labour's education project is the National Grid for Learning – unveiled a year ago and about to go live after eight hard months of prototyping.

But apart from a Web site or two (**www.ngfl.gov.uk** and **www.vtc.gov.uk**) and some locally publicised pilot projects, the Grid has failed to electrify the British Internet scene. If Netscape or Yahoo! announced they were going to spend £100 million over the next three years to get 32,000 businesses online and build a set of connected Web sites to act as a major portal for a captive population of nine million Net users (the number of schoolchildren in the UK), everyone would want a piece of the action. Somehow the Grid has failed to capture our imagination. Partly this is because it's still a prototype – Owen Lynch, chief executive of BECTa, the people building the Grid, said recently in an online debate with teachers (on the TeacherGrid UK site at **www.vtcentre.org.uk**), "there's a danger that if we create too much hype, too early, many could be disappointed by the range of content that's available within the prototype stage".

Another problem is that even a year after the announcement, nobody is very clear about what the Grid really is. The Web site calls it "a mosaic of interconnecting networks and education services based on the Internet." Alistair Wells, head of IT at Netherhall School in Cambridge, says "most definitions end up with something similar to the Internet," while Andrew Crawford of BT argues "to me it encompasses everything available to help schools become community centres and teach better." Adrian Carey of education ISP EDEX is blunt in his assessment: "I'm still having a struggle working out what the Grid is," he admits, while Mark East, general manager of Microsoft's UK Education Unit, says "it's the connection of all the connected learning communities," which may mean something within Microsoft, but leaves parents looking confused.

In the Technology and Training Branch of the Department for Education and Employment, they define the Grid as "an architecture of content within the Internet," and "a programme for equipping schools." The equipping schools bit is easy – Tony Blair has pledged that every school will be online by 2002 (even if the definition of online has to be stretched to include a single dial-up AOL account for the whole school). But the "architecture of content" is more interesting, because it makes it clear that the designers of the Grid are really building an education-focused portal site, just like lots of the big Internet companies.

Portals and hubs

At the moment, the main Grid site has four areas – a Virtual Teacher Centre, a Standards and Effectiveness Database, a Governor Centre and a Further Education Hub. The FE Hub is just an organised collection of links to other sites, but at the Virtual Teacher Centre there are online resources for working teachers, a chat space, links to official documents, and downloadable materials for help with lessons. These ➢

Where It Came From

The NGfL did not spring, fully-formed. from David Blunkett's brow one afternoon in his office at the DfEE. In 1995, Labour, then in opposition, set up a working group on the Information Superhighway. The resulting policy document, *Communicating Britain's Future*, had a lot to say about the importance of the Net for education – it stated "In many ways it will be in education that the greatest potential uses for the new networks will emerge" and went on to call for schools to install local area networks and for affordable Internet connectivity to be made available to schools.

Once in power, the plans for education and the Net rapidly crystallised around the idea of a learning network, and the National Grid for Learning (NGfL) was proposed in October 1997, in a consultation paper, *Connecting the Learning Society* (available at www.open.gov.uk/dfee/grid/index.htm).

The paper called for money for training teachers in the use of computers, money for schools for equipment, and the grid to hold it all together.

At first it seemed that the Grid would be just that – a physical network set up by the Government, rather like a school equivalent of the Joint Academic Network (JANET) which links universities. But it was soon apparent that this sort of centrally planned socialist approach was never in New Labour's plans. The Grid was to to be a public/private partnership, not a Government project. And so it remains, with a £230m budget for teacher training to be spent over the next three years, £100m in the Standards Fund for school connectivity and equipment, and a selection of Grid projects co-ordinated by BECTa.

Who Runs the Grid?

The NGfL is the responsibility of the Department for Education and Employment (www.dfee.gov.uk), under David Blunkett, Secretary of State. Junior Minister George Moody is responsible for lifelong learning, teachers' pensions and IT and new technologies in education. The senior civil servant dealing with it is Andrew Partridge in the Technology and Training Branch.

Responsibility for implementing the Grid – and for the budget of £100m – has been assigned to BECTa, the British Educational and Communications Technology Agency (www.becta.org.uk), formed from NCET in January 1998. BECTa has four directorates, and the one for the NGfL is headed by Fred Daly.

While £100m sounds a lot, there are 32,000 schools, 450,000 teachers and over nine million school pupils, so it won't go far. The money has been put into a 'Standards Fund', and schools have to apply for funds for projects through their local education authorities, which are expected to pay half the costs. Individual schools can start their own projects, and many commercial suppliers are running pilot projects involving numbers of schools which get hardware, software, connectivity and support as part of the project.

The £230m of Lottery Funding to be used to train teachers in the use of IT is being managed by the Teacher Training Agency (www.teach.org.uk) and will be available from 1999. The first step is to get teachers to assess their current skills and training needs, and BT Education (www.bteducation.com) even have an online questionnaire for teachers – download it from

Illustration: Peter Clarke

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currently only cover IT training, but the next stage of the Grid Web site development will go live during the next school term, and will include more teacher resources such as schemes of work and individual education plans.

It should also incorporate 'managed services' – transaction-based services that may include curriculum management and even schools administration. And there will be more extensive links to third party content, extending beyond the current set of Education Department circulars and press releases.

Whether the extended Grid truly qualifies as a portal is a matter for debate – there are no plans to offer Web-based email or calendar services from the Grid site, but these will be available indirectly, from the ExcitePost service. And the Grid is aiming to become the default homepage for teachers, offering "a way of finding and using online learning and teaching materials".

Who wants to play?

While it might not have got a lot of attention outside schools, there has certainly been no shortage of companies eager to participate in the Grid. Since the whole thing is about connectivity, the main educational ISPs – BT (**www.bteducation.com**), EDEX (**www.edex.net**) and RM (**www.rmplc.co.uk**) – are heavily involved. Microsoft, whose CEO Bill Gates visited Downing Street to offer advice on the Grid to Blair just before the official launch last October, has a lot invested in Grid projects. And under the aegis of the charity UK NetYear (**www.uknetyear.org**), formed earlier this year with the aim of connecting 10,000 schools to the Internet by December, Excite is offering all British schoolchildren free email accounts through its ExcitePost service (**www.excitepost.co.uk**).

All of these players expect to make money from their involvement, either directly or indirectly. Excite's director of European operations, Evan Rudowski, says it wants to "establish an ongoing presence in the market," and that although it'll never put "straight out adverts or promotions of commercial products" within the ExcitePost service, it'll be looking for sponsors who will have a presence on the site. This could be a serious issue for the development of the Grid, but it's one that's not been addressed by the Government. The philosophy of the Blair administration has been to work closely with business interests, and there was never any thought that the Grid would be anything other than a public/private partnership.

Local and national

As well as the national initiatives, there are many local projects that support the work on the Grid. Netherhall School in Cambridge has set up what it calls a Local Grid for Learning (**www.netherhall.cambs.sch.uk**) offering pupils, teachers and parents access to the Net and school systems, with support from locally-based ISP UUNET, Sun Microsystems and local cable provider Cambridge Cable. In Bradford BT, Yorkshire Cable and RM plan to link up 300 local schools, and a similar project is planned for Birmingham.

The Netherhall project demonstrates the importance of commercial involvement in the Grid. Richard Woods, marketing director of UUNET, which provides the Internet connection for the school, says that although they provide Netherhall with a free 64K line for the moment, this can't last. "We're trying to build a replicable model for other schools to follow," he says, making it clear that "our involvement in schools has to become commercially sensible." For Woods, this means helping Netherhall School to develop as a small-scale ISP, providing dial-up access to the Net for its local community and passing revenue on to UUNET.

Alistair Wells, head of IT at the school, accepts this argument, and hopes to build an "industrial-strength business model" around his school – one which could be copied by ➢

"Our involvement in schools has to become commercially sensible."
Richard Woods, marketing director, UUNET

Questions to Ask Your School

Find out how much your child's school knows – and what it's planning to do about – the National Grid for Learning

- Does the schools have an ICT co-ordinator? (A teacher responsible for the computers in the school). What training have they had?
- What sort of Internet connection does the school have?
- When will the school have a local area network and a routed Internet connection in place?
- Has the school registered with UK NetYear? If not, why not?
- Have teachers been asked to assess their IT skills in preparation for an application for training funding from the Teacher Training Agency?
- Have we got a copy of the BECTa publications on Internet for schools? Does

BECTa British Educational Communications and Technology agency

Edex Internet NETworking for Education™

BECTa is the agency responsible for implementing the grid; education ISP EDEX is cautiously enthusiastic

Connecting the Learning Society

others. He recognises that he needs to "find a package which can be delivered to all schools that will generate income or feedback to give (the sponsors) what they want."

Evan Rudowski at Excite is another who believes that the public/private approach is the right one. "A commercial entity can be more capable and responsive to conditions in the market," he claims, arguing that governments can't handle this complex and critical technology.

"The AOL offer really bothers me because it's taking schools back to nowhere. Dial-up is a single user service for intermittent bursty traffic – it's not a curriculum tool"
Adrian Carey, EDEX

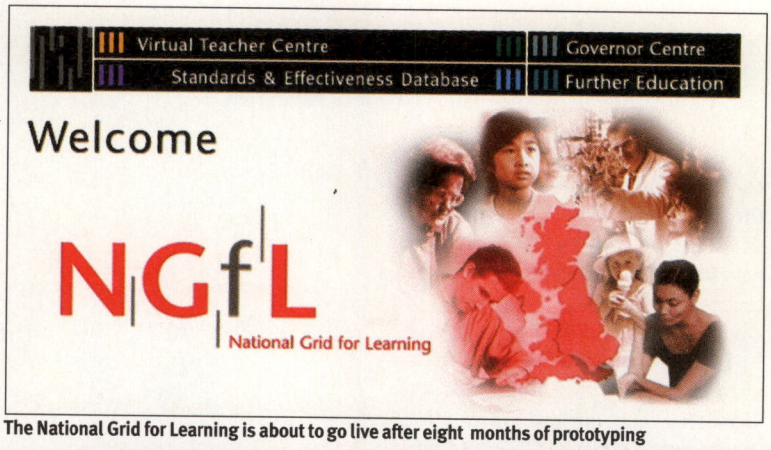
This view is echoed by Phil Hemmings of Research Machines, another major supplier for the Grid. He doesn't think the JANET model of a centrally built and managed network paid for by all schools would be appropriate. "JANET is not awfully well managed – it's a closed, slightly amateur network". For RM, "the best way to get some sort of online electronic connectivity is to participate in the world Internet market".

At Microsoft, Mark East agrees that a Government-directed network wouldn't work. "I don't believe the Government can fund it continuously," he says, arguing that we need to provide schoolchildren with the technology they need for 'anytime/anywhere' learning and that Government simply can't afford it.

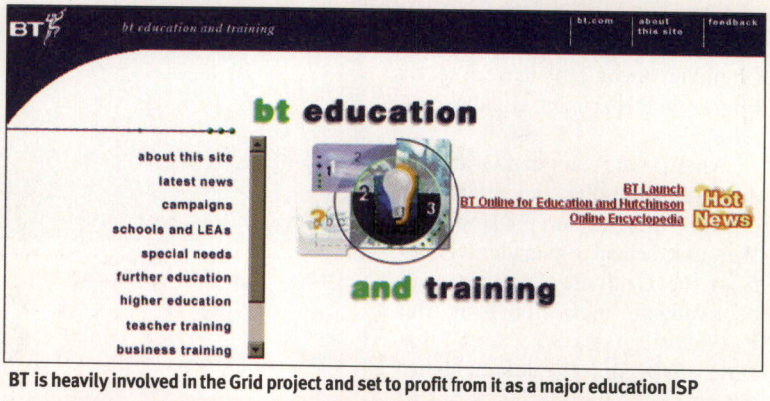
What the Grid does

The Grid works by promoting pilot projects and also by providing schools with real funding to help them get online or make better use of ICT. Proposals for funding are made to local education authorities, which have to provide half the funding. According to Phil Hemmings of RM (www.rmplc.co.uk), the fund has been highly successful.

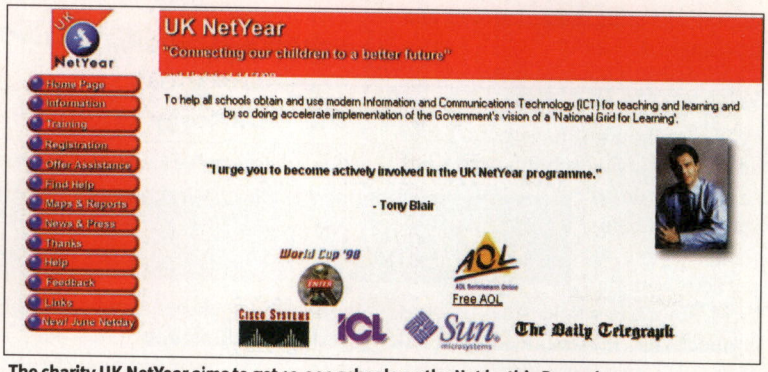
"The market has changed," he says. "More money is being spent, and it's being spent in the kinds of schools the Government has identified as priorities." This means disadvantaged secondary schools and, most significantly, primary schools. "Our primary school business, year on year, has substantially increased," says Hemmings.



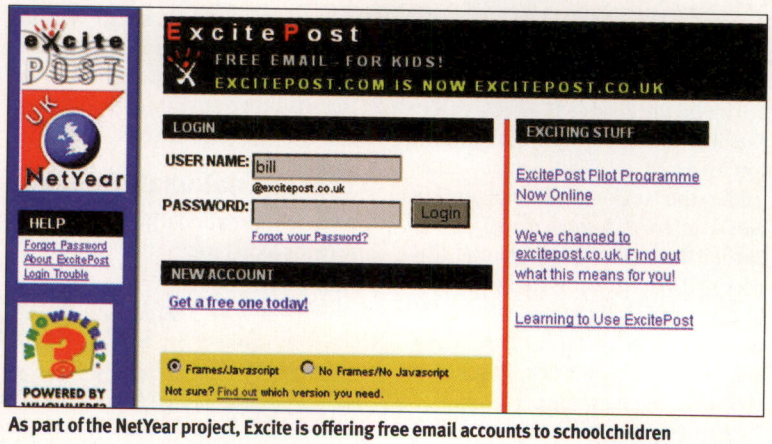
The National Grid for Learning is about to go live after eight months of prototyping



BT is heavily involved in the Grid project and set to profit from it as a major education ISP



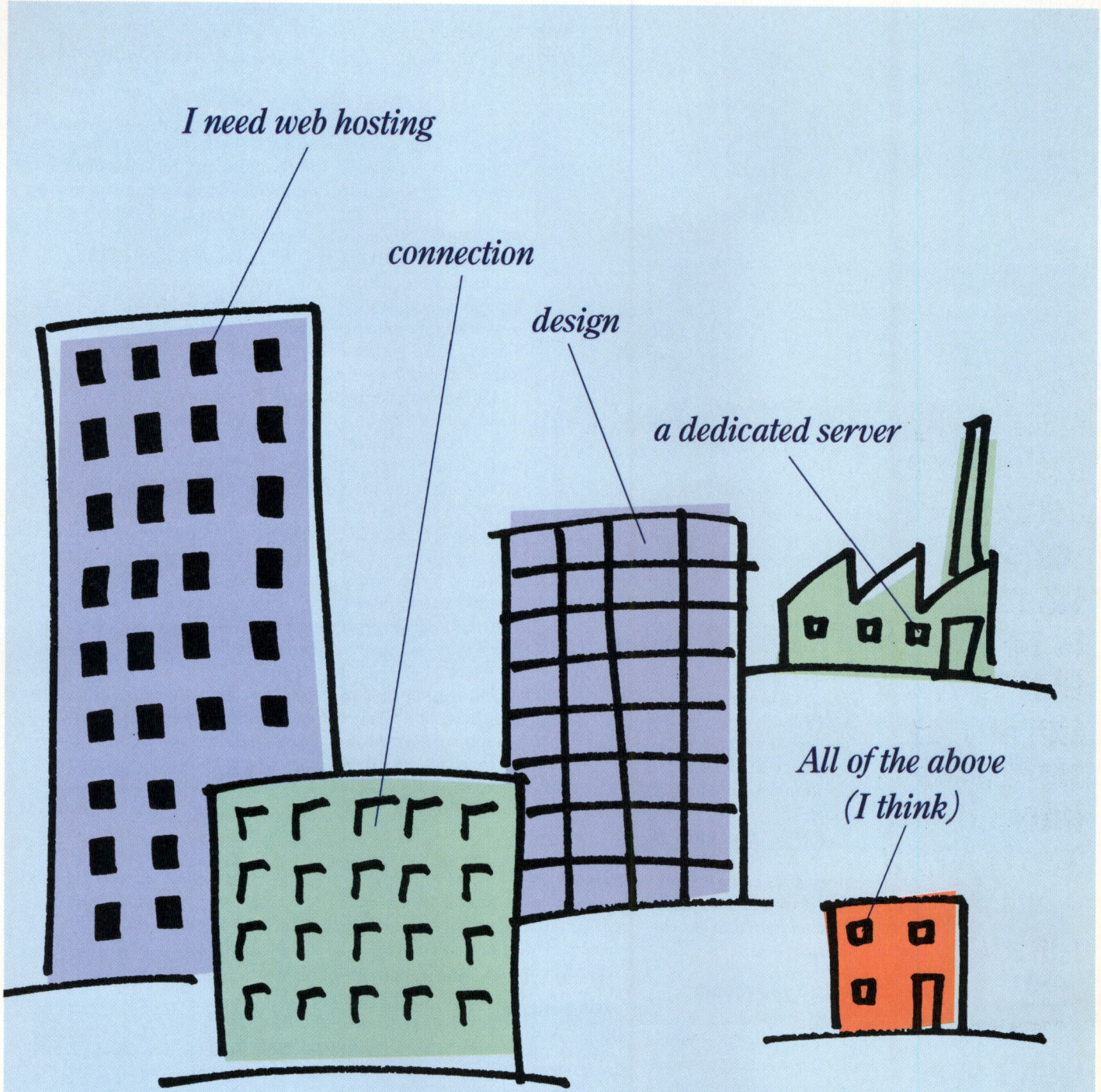
The charity UK NetYear aims to get 10,000 schools on the Net by this December



As part of the NetYear project, Excite is offering free email accounts to schoolchildren

"Typically, they're buying small networks which have shared connections to the Internet."

It's not only the connectivity providers which are working on Grid projects. Schools are also looking for useful educational resources online, and for curriculum-based software. RM is selling hardware, software and services into schools. BT has just launched a new initiative called BT Online for Education, selling Dell hardware, software and services, and Microsoft Education is working with a number of partners to develop software it can sell into the schools market. According to Mark East at Microsoft, "Computers won't ever replace books,



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Useful Links

National Grid for Learning
Main homepage for all NGfL projects and background www.ngfl.gov.uk

Virtual Teacher Centre
The place for working teachers. You need to register (free) – using a form that asks your age! Feel free to lie (we did) www.vtc.gov.uk

BECTa
The Government agency responsible for the Grid. Many useful publications listed, some available online www.becta.org.uk

TeacherGrid from RM, Microsoft and BT
One of the many non-Government resources available for teachers. Lively discussion groups www.vtcentre.org.uk

RM's Eduweb
One of the three sites supplying content to TeacherGrid; also has extensive curriculum links www.eduweb.org.uk

TeacherNet
Run from Anglia Polytechnic University www.teachernetuk.org.uk

UK NetYear
Charity aiming to get schools online. Publishes a comprehensive guide to school networking www.uknetyear.org

Netherhall School
One of the most extensive school Web sites. Offers commercial service to local community/business www.netherhall.cambs.sch.uk

BT Education and Training
www.bteducation.com

Teacher Training Agency
The people who will administer the training fund www.teach.org.uk

but technology gives access to many resources," and his team is trying to find out what works and what can be delivered to schools.

"Computers won't ever replace books, but technology gives access to many resources."
Mark East, Microsoft

What do you mean, online?

The exact nature of the Internet connectivity available to schools is a source of some conflict. In July, AOL, which is not otherwise involved in Grid projects and has no plans to integrate its existing education content into the Grid, announced that, from September, it would be offering free Internet accounts to schools registered with the UK NetYear charity. UK NetYear chairman, David Wimpress, says he expects several thousand schools to take up the offer.

Many question the value of a single dial-up account to a school. Adrian Carey of ISP EDEX says his company's goal is to "get broadband connectivity for schools and colleges at prices that primary schools can afford". He believes that dial-up connectivity – even ISDN – isn't sufficient for any school. "Schools with quality connections are beginning to learn what that means," he says. "The AOL offer really bothers me, because it's taking schools back to nowhere. Dial-up is a single user service for intermittent, bursty traffic – it's not a curriculum tool".

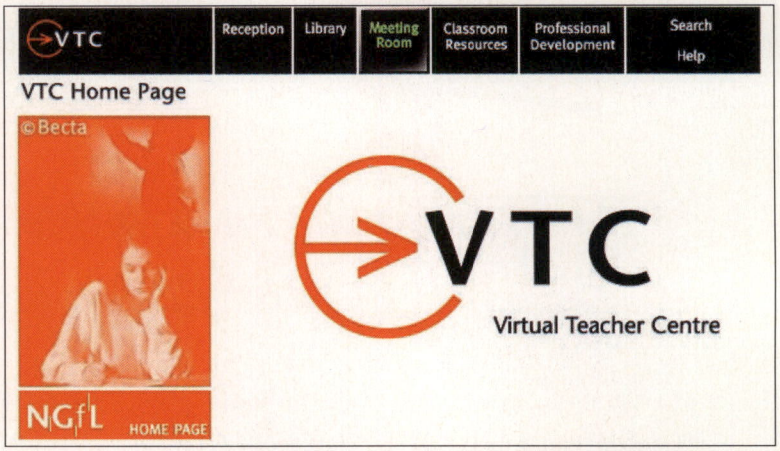
Carey is also critical of BT's special service for schools, Schools Internet Caller, which offers an ISDN connection for a fixed price of £790 per year for use between 8am and 6pm on school days (many cable companies offer a similar deal). "ISDN is a million times better than dial-up over the PSTN," he admits, but it's still a dial-up connection and he believes schools need fixed connections which would allow them to become publishers as well as consumers.

Where next?

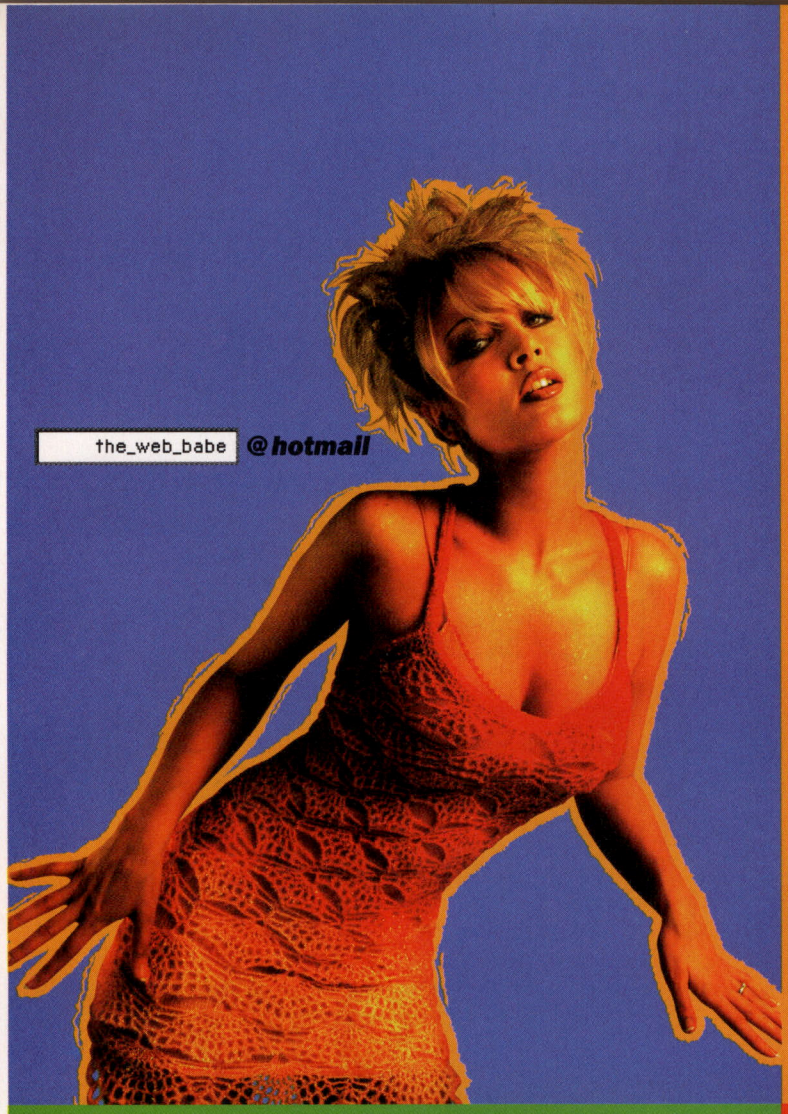
Within schools, Internet access is an enabler, and nobody questions the usefulness of the grid – according to the Department for Education and Employment, more than 90 per cent of the responses to the *Connecting the Learning Society* consulation paper were supportive – but it must be used properly. A single Internet-connected computer in a library is a useful resource but, as Adrian Carey at EDEX stresses, a school local area network and a fixed 2Mb connection accessible from any terminal in any classroom creates plenty more possibilities.

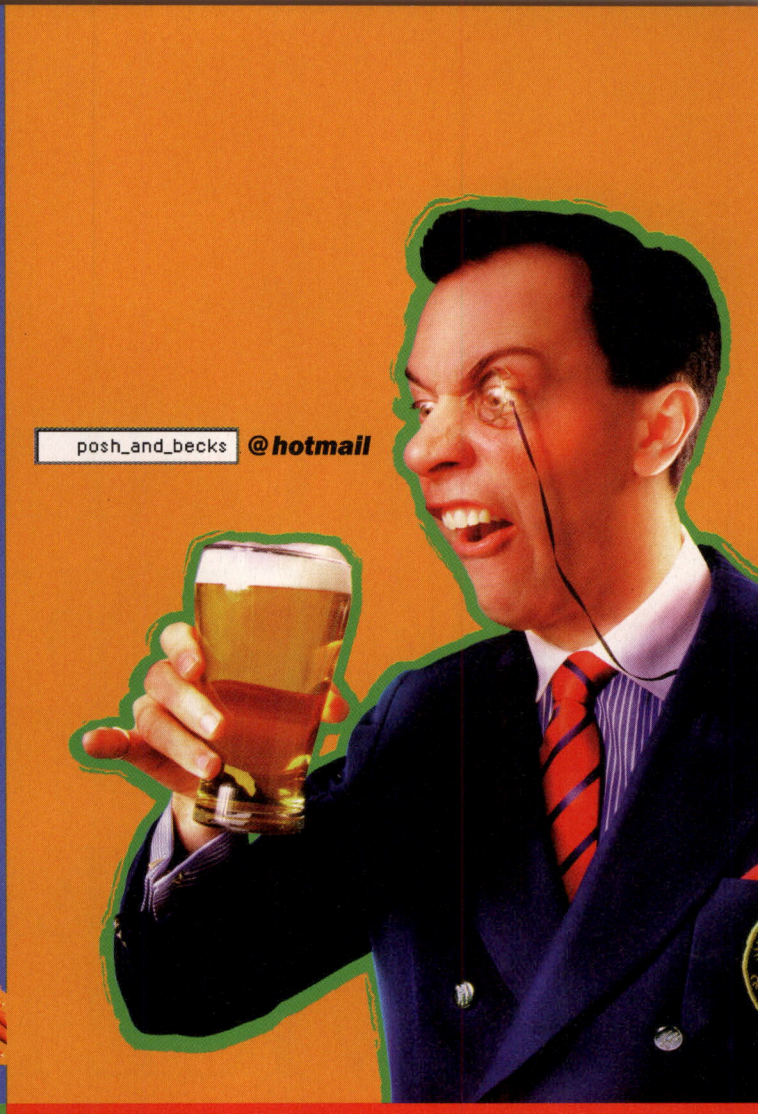
At the moment, the focus is on hitting the target of getting schools connected, without really considering the quality of that connection. Alistair Wells at Netherhall argues strongly that schools really need "industrial-strength connectivity," a view echoed by Mark East and others. East also admits that "I don't think that today we have a National Grid – it's a vision statement that people can mobilise behind." Whether the vision is one that will bring positive benefits to our schools remains to be seen.

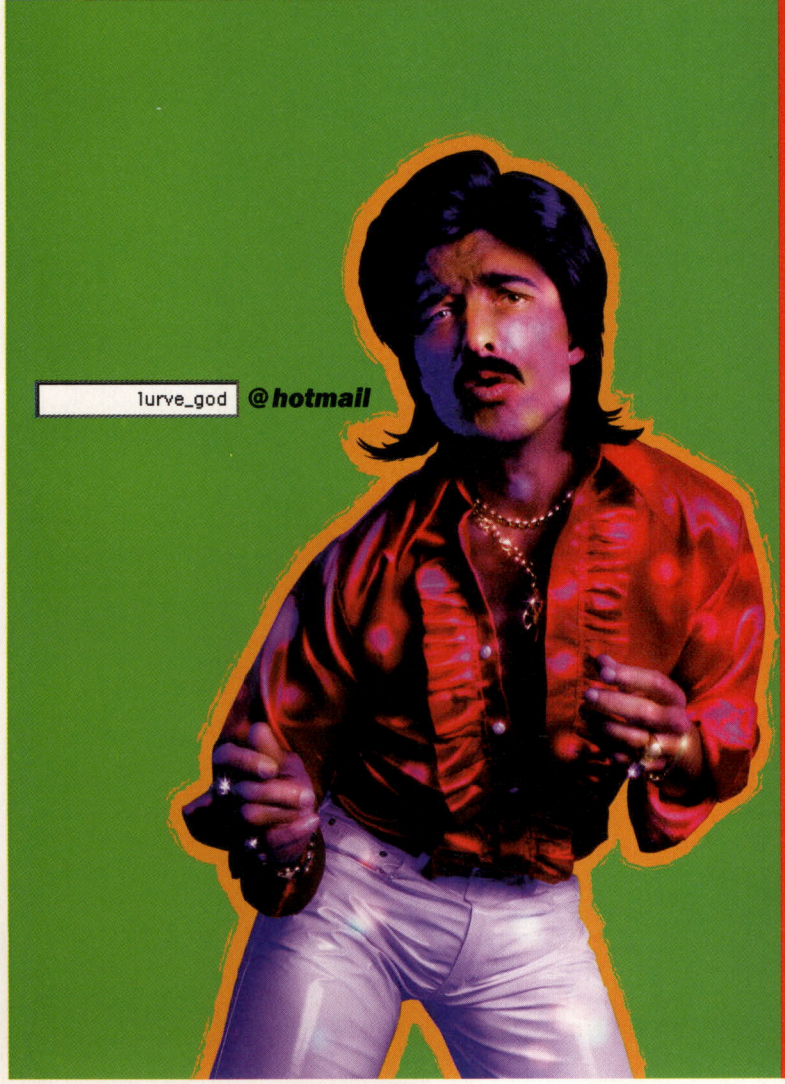
Another issue facing the Grid is that of unequal access. At present, all resources on the Grid site are free (to private schools as well as State schools), but there's no commitment to maintain this, and as more commercial curriculum-based content goes up, the likelihood is that some form of charging will be introduced. Smaller schools may not be able to afford this from their budgets – or they may be faced with the choice of buying access to online resources or paying for learning support staff or even teachers. At the moment, there's no guidance on this, apart from indications given in an interview with Fred Daly, NGfL Director at BECTa, where he said "schools must assess whether the Grid is going to be as valuable to them as, say, a library or teachers, and plan accordingly." Losing a teacher to gain Internet access may not look like such a good idea when class sizes are already over 30 in many schools. im



The Grid's Virtual Teacher Centre has online resources for working teachers, a chat space, education links and lesson materials







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October Issue of Personal Computer World Reliability Survey on sale 27th August

SHOW ME THE MONEY!

How much are you worth? And how much more could you earn?

Gail Robinson tells you how to up your value on the Net market

WORKING YOUR WAY TO THE TOP

E-commerce consultant

Average salary: £60K plus

Skills needed: E-commerce is a vague term, so we spoke to regular *Internet Magazine* writer and e-commerce consultant Tim Rafferty to try and get a clear definition. He stressed an understanding of how to integrate legacy systems into the Web. Rafferty told us, "business to business e-commerce is probably the biggest growth area." To develop retail e-commerce solutions you'll need to know how to combine a Web application with an existing stock ordering system and/or payment system. To get the real big money should also have project management skills.

Is it for you? Yes, if you're not afraid of going into companies talking tecchie to the computer guys and talking business and money to the finance directors.

Internet consultant

Average salary: Around £50K

Skills needed: You'll need a good understanding of all the big Net technologies. Great communication and management skills. And you must excel at research and report-writing.

Is it for you? To really rake in the cash, this job is best done on a freelance basis so be prepared to be flexible.

Creative director

Average salary: Around £45K

Skills needed: All the usual design skills plus you'll have to manage teams, handle clients and pitch ideas. You'll need to keep an eye on the advances in Net technology – and even if you don't know how to drive the software, you'll need to assess its usefulness.

Is it for you? Yes if you want to take the next step up from simply designing sites to a more managerial role.

Web site manager

Average salary: Around £40K

Skills needed: You're going to have to be a jack of all trades because if it's broke, you fix it. If you can turn your hand to Web hardware, Unix, Web application development, Apache and perhaps SQL too, then this could be the job for you. Techies who can mix programming with management skills can command staggering salaries. Recruitment agency Reed Computing reckons a techie with management skills can earn up to £100,000 a year.

Is it for you? With that kind of salary, are you kidding? However, if you don't like people hassling you and are really turned off by the management side of things, you might want to give it a miss.

Web/database integrator

Average salary: Around £40K

Skills needed: Sound knowledge of database design. Experience of how to access databases through a Web front-end plus SQL and Oracle experience.

Is it for you? Once you get into linking into back-end databases you're on the way to breaking into the lucrative e-commerce arena.

Visual Basic specialist

Average salary: £30K

Skills needed: These guys are in short supply at the moment, according to Reed Computing recruitment. You'll need to know your objects, and ads often ask for a working knowledge of Active Server Pages, ActiveX, NT and SQL.

Is it for you? You need to have a special kind of mind to program all day – logical preferably.

Senior Web developer

Average salary: Around £28-£30K

Skills needed: You won't get away with just one Net programming skill for that kind of salary. Perl, HTML, Java and Dynamic HTML are all pretty essential. As well as the usual Net skills you'll need to be familiar with database and business apps and Web server software.

Is it for you? Yes, if you've got a burning desire to create an interactive Web site rather than one that just looks good. And remember, the more technical skills you pick up on the way, the more money you'll be worth.

Account manager

Average salary: Around £27K

Skills needed: Straight up account management skills, including project management, presentation and client handling, should be coupled with an appreciation of new media. If you really want to show your enthusiasm, learn the basics of HTML and JavaScript – that way you'll be able to talk to your clients in a knowledgeable fashion, and the Web developers won't be able to con you.

Is it for you? Yes, especially if you're currently in a conventional account manager position and you have a passion for the Net.

Entry level Web site designer

Average salary: Around £20K

Skills needed: Conventional design skills are as important as HTML. Employers look for experience in Quark, Photoshop and Illustrator, and if you want to really win that job you should add Director and HTML to the list. You'll nose ahead of the competition if you've taken a multimedia college course. Familiarise yourself with these key Net tools: DeBabelizer, Dreamweaver, Shockwave and RealAudio.

Is it for you? It's a good way into the business and a good way to learn those programming skills (CGI, Perl, Java and so on) that will make you a much more valuable proposition in the future.

Web editor/content producer

Average salary: £15-18K

Skills needed: These are the bods who do the grunt work, writing copy for sites. This job doesn't demand a huge amount of technical skill. You will need good writing skills and a grasp of how to write the bite-sized, snappy chunks of copy that work so well on the Web. You'll also need a basic knowledge of HTML so you can put your copy online, add hyperlinks and so on.

Is it for you? As a full-time job this is not a hugely lucrative business to be in. Probably best done on an hourly rate.

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Work in the Internet industry. It's a land of milk and honey where stock options and bonus schemes mix with a relaxed, desperately fashionable working environment. OK, that's the hype. The reality is more like long hours, an office in a warehouse and a crappy initial salary which leaps up in irregular, but rewarding, stages. There's a lot to be said for a job in new media, though. The financial rewards can be huge. The *San Jose Mercury News* (purveyor of news to one of the biggest hi-tech areas in the US) boasts that "kids just out of college are getting $5,000 signing bonuses and $45,000 starting salaries". And it doesn't matter if you're trying to get your first job in the industry or if you're planning your next career move – there are lots of techniques you can use to make yourself more seductive to a potential employer.

"It's a job hunter's paradise. Kids just out of college are getting $5,000 signing bonuses and $45,000 starting salaries." The San Jose Mercury News

We've scoured the Net recruitment services to find out what skills you need and what kind of salary you can expect (see page 42 for details). We've also asked the experts – from specialist Net recruitment agencies through to Web design companies – to tell us what kind of skills they'd like to see in an ideal job candidate.

HTML is no longer enough

First, the disappointing news. You can't get by with a smattering of HTML. HTML by itself doesn't make you a desirable employee any more. Take a look through the ads for Web developers, and you'll find employers are looking for Perl, JavaScript, and CGI knowledge as well as HTML. It's no longer good enough just to put a site online that looks good – it has to interact with visitors and work with a company's existing databases and applications. This means Web sites are becoming applications in themselves, so the process of building a site is getting more and more technical. Get the programming knowledge now – it'll be worth it. Remember the golden rule – the more technical the job, the bigger the pay packet.

So, how do you get these programming skills? University degrees and certificates in advanced CGI programming don't seem to hold much sway – the qualification is not as important as the technical experience. The Net industry is eager to welcome those who've developed the skills off their own back as long as they can show proof of these skills. Aidan Cook, director at Web design agency Sense Internet, wants "somebody who's built and managed a Web site themselves, no matter how small. Whether you're an account handler or a producer, you need to have that experience."

Annie Millar, partner in the design agency Millaer Seale, concedes that "it's better to have a college degree or a training course behind you than nothing at all." But employers are still going to want to see your work, and more than that they'll want to see the planning that went on behind the work. You'll also need to show that you can do more than use the WYSIWYG HTML editors to build pages. At some point, you'll have to get down and dirty and handcode HTML.

Perhaps the one area where a qualification might help you is in Web design. Mark Curtis strategic solutions directorat design agency CHBI/Razorfish recognises the value of the multimedia design courses running at the Royal College of Art, Westminster College and the London College of Printing. Whether you're doing paper-based design or creating Web pages, a sound knowledge of Quark Xpress, Photoshop, Illustrator and preferably Macromedia's Director will stand you in good stead.

Top tips on how to raise your value in the Internet industry

1 **Be prepared to work for free for a trial period. Pick out the company you want to work for, take a trip down to their offices and offer your services free for a week. This kind of trial period is especially common in the Web design industry, Annie Miller told us how it works. "We give you a trial, and that seems to be a common approach. People are willing to be abused at the beginning."**

2 **Build your own site.** Everybody we spoke to for this article – from recruitment agencies through to the Web designers themselves – told us they want to see a site you've built and managed. Aidan Cook at Sense Internet speaks from experience. "The first guy we employed did the Unofficial Manic Street Preachers site. We knew he'd had experience of running a site and he'd had the reponsibility of having to respond to customers." Also be prepared to show that you've thought about how to make the site successful. It's not all about design, you have to know how to promote your site too. One final tip here from Jocelyn Somner at Reed Computing Personnel – "Pay attention to details. Programmers and developers often produce beautiful sites with terrible spelling mistakes."

3 **Don't just learn the code. To get ahead, you'll need to keep on top of the trends in the industry. Make sure you keep tabs on the new standards being introduced – that way you can become involved in making strategic Internet decisions for your company. And what better way to do it than by reading each and every copy of *Internet Magazine*? Attend conferences, shows, do more than your fair share of networking, and generally keep your ear to the ground.**

4 **Go where the action is.** Web design agencies are scattered around the country, but you'll find most of the action is around London and in the M4 corridor. And where there's a shortage of skills, there's money to be made. There's also a lot of Internet activity in Cambridge, helped on by Microsoft's investment in research facilities there.

5 **Know what you're talking about. Do your homework on any prospective employer. Go to their site, track their financials, check out the competition, become familiar with their client list...**

6 **Have a life outside your Net job.** Simon Andrews from Poppe Tyson told us "the stereotypical geek working all night and surviving on takeout pizza is not sustainable. They wake up, realise there's a life outside and go off and do something else."

7 **If you're a techie, learn management skills, and if you're an account manager, learn the basics of Web technology.**

8 **Join any newsgroups relevant to the job you want to get.** It's here that you'll hear the gossip in the industry and make valuable contacts.

9 **Constantly retrain yourself. It doesn't have to be formal retraining – take the time out to learn new practical skills. Training courses are also a good way to meet prospective employers. Often Web designers will check out the nearest college in a search for new staff members.**

10 **Clean your teeth** and polish your shoes – or at least scrub your trainers.

Find the gap in the market

Surprisingly, when we asked IT recruitment consultants if there was an obvious skills shortage in the Internet market, they said no. "It's not the technical skills that are lacking," Jocelyn Somner at recruitment agency Reed Computing told us, "it's more a shortage of commercial experience." You can send someone on a Java course, but you can't teach them experience.

The biggest recruitment problem facing the industry is finding people who can mix the technical with the creative. Annie Millar explains, "We want a creative who isn't frightened of technical restraints, and a techhie who's not afraid of creativity. They also need to be good managers of themselves and of their time." If you're a techie, the best way to progress your career is to get yourself those management skills.

Even if you're an account manager with no direct responsibility for developing sites yourself, it's worth taking the time out to understand how sites are put together. Aidan Cook told us, "The most difficult jobs to fill are account handlers and managers. There are plenty of people who can talk to clients and loads of folks who can design sites, but to get a combination of the two is rare." We recommend that ➤

account managers take the initiative and sign up for a basic HTML course. Not only will it help you talk to Web designers, but clients will respect your technical knowledge. Simon Andrews at new media agency Poppe Tyson backs up this theory. "We want specialists in all the skill sets, but we want people to be interested in the other skills so they can work well as part of a team."

If you've got the time and inclination to learn a Web programming language, though, go for Java. Java is becoming increasingly important as a way of linking a Web front-end to a company's legacy systems. Java abstracts any hardware/operating system implications, so it's a better place to start as the skills are transferable. Alternatively, if you want to stay in the Windows environment, spend some time getting to know Visual Basic. Reed Computing are always on the look out for Visual C++ and Visual Basic programmers.

"Technical jobs are the most difficult to fill. The seriously talented can sell their souls and make a bundle in the city." Mark Curtis, director at new media agency CHBI/Razorfish

How to find the perfect job

Aspiring Web site developers should start by looking at the Web sites of the design agencies they admire. It's worth sending off your details on the off chance to the webmaster, and don't forget to include the URLs of sites you've built. Most design agencies will keep these details on file. "We don't advertise our jobs. We know we'd just get too many responses. We keep on file people who've sent us CVs and we flick through that," Annie Millar told us. Most of the job requests at CHBI/Razorfish also come direct through the Web site.

Recruitment agencies come in for a bit of grief from Aidan Cook. "We have nightmares looking for staff, consistently hellish. So-called recruitment agencies give you really variable people." Well, given that kind of attitude to recruitment agencies, your best bet is to approach companies direct.

The situation is slightly different, however, for those looking for marketing or account manager-type jobs. Here it's probably worth lodging your CV with a dedicated new media recruitment agency (for details of where to start, see the box on the right). CHBI/Razorfish were very complimentary about the recruitment agency, Major Players (**www.majorplayers.co.uk**).

Are you too old?

Walk into any new media business, and you'll notice the average age is around 25. Annie Millar commented, "they're all under 30, and if they're not they're pretending they are." To prove the points, here's a cautionary tale from the US. 45 year old Alan Ezer retrained in Java, hoping to cash in on the booming new media market. Over a two-year period, he sent his CV out to over 150 companies, and in return got just one interview. All this happened at the same time as the leading US newspapers were claiming a drastic shortage of people with the right skills in the high-tech industry.

Normal Matloff, a computer science professor at the University of California set up some research to investigate whether this so-called skills shortage really existed. His findings pointed to the companies being their own worst enemies. He argues that IT companies only want the young graduates for two reasons: they can get away with paying them lower salaries; and they're far more likely to work all hours since they don't normally have the responsibilities of families. Matloff reckons if the industry broadened its scope and looked outside the graduate market at those mid-career folks who'd bothered to retrain, they'd find a plethora of suitable candiates.

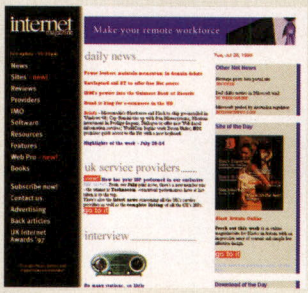
Matloff's arguments have a ring of truth about them. When we asked representatives of the UK Net industry if they thought it was an ageist business, most had to acknowledge that it was. Mark Curtis argues that the situation will change as the industry grows up. "Once you get past the age of 28/29 there are no designers that have grown up with this medium. Print designers can't hold a candle to those designers coming out of a HTML/multimedia course."

But none of the people we spoke to said they would refuse to interview a candidate with the right skills who was in their 30s or 40s. If you're in this position, remember you probably have the management skills so sorely lacking in the new media industry at the moment. Gen up on the latest Net technologies, and you should have the right mixture of management and programming skills to get a well-paid job. im

"We're not looking for any specific knowledge because things change so fast and it's easy to learn stuff. You've got to have an excitement about software, a certain intelligence..." Bill Gates telling the Wall Street Journal what Microsoft looks for in a prospective employee.

Where to go from here

To keep up to date on the latest trends in the industry, sign up with the following sites



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New Gig from the Industry-Standard is an email newsletter with mostly US news on Internet recruitment. Find out how much you're worth in the global economy. **www.thestandard.net**

Become familiar with the **Hotwired** site. Not only is it a great source of Net news, there's also a Dream Jobs section. **www.hotwired.com/dreamjobs/**

News.com is also an excellent source of in-depth Internet news stories although, like Wired, it's all written from a US angle. **www.news.com**

For more on **Dr Norman Matloff**'s theory about age and the Internet industry, read Debunking the Myth of a Desperate Software Labor Shortage **http://heather.cs.uedavis.edu/itaa.real.html**

Recruitment agencies

Check out **Reed Personnel**'s new media and computing sections. The new media section is a bit lacking in jobs, but computing is packed full. You'll also find a handy salary calculator which tells you the average salary difference between London and the rest of the UK. **www.reedcomputing.co.uk**

Price Jamieson is worth a look. It specialises in communications and technology recruitment. **www.pricejam.com/index_oldbrowser.html**

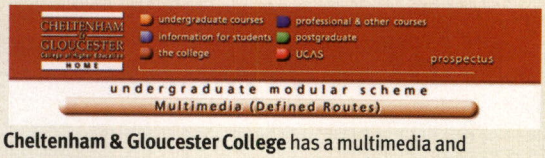
Computer People has a reasonable selection of jobs. **www.computerpeople.co.uk**

JobServe, a huge database of IT-related jobs culled from a variety of recruitment agencies. **www.jobserve.com**

RecruitNet, jobs as advertised in *The Guardian*. **http://recruitnet.guardian.co.uk**

Major Players specialises in marketing services jobs. Potential account managers should visit. **www.majorplayers.co.uk**

Training courses



Cheltenham & Gloucester College has a multimedia and computing course. **www.chelt.ac.uk/ugrad/mdlhons.htm**

Informed Business Systems does a range of basic Web design courses which would be good for those with an account management role. **www.informed-ibs.com**

Check out the **Sun Microsystems** site. It'll point you towards Java training courses. **www.sun.co.uk**

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Hey big spender

You've got a great new Net idea that just could make you a million. It could be huge but your bank manager won't even look at your proposal. Before you rob a bank, buy thousands of lottery tickets or sell your kids, approach a few friendly venture capitalists. Grant Heinrich offers tips on how to get the big moneylenders of the Internet industry to part with their cash

It's a great idea, and it's going to make you rich. You're going to create the first company in the world to manufacture Internet widgets. All you need is £1 million to get the business up and running, and people will bang down your door, huge purchase orders in hand.

Only a million, eh? Do you want the good news or the bad news? The really bad news is that banks won't deal with you. Bank managers are so nervous about investing in high-tech business ideas that most simply won't bother. What you need instead is help from a venture capitalist. Probably the best-known bankers within the Internet industry, VCs

Illustration: Damian Chidgey

specialise in sky-high ideas like yours. But even they prefer to work only with experienced business people – those who've already run companies and understand how to manufacture and sell a widget.

That's not you? Well, don't give up yet. Even if you're a 17 year old in a garage, you can still make your proposal fly...

What VCs want from you

Before talking to a VC, you need to understand how they work. They're quite different to the money-lending organisations most people are familiar with – the high street banks. That institution makes a profit by loaning you money and charging X or Y per cent interest as you repay the loan. Because money starts being paid back almost immediately after a loan is made, and because a bank may have asked for your house as security in case you don't repay your money, banks can charge relatively low interest rates. Low compared to a venture capital group, that is. VCs don't charge interest as such, instead they ask for equity in the company they're helping you establish. Up to 49 per cent equity. Which means they could own almost as much of your company as you do. However, they also face the same risks you do as a company owner. If a business fails, a VC's investment is goes down the tubes with it.

To offset this risk, VCs try to invest only in high-growth companies that can be sold within one to three years for an enormous profit. Having usually offered a start-up company £1 million-£5 million initial investment, a VC will hope to recover at least 20 times that. That's a big chunk of money – and you could argue that it's your money – going into someone else's pocket.

So why work with VCs? Well, they may be the only source of capital available, says Peter Cheese, MD of Cresco, a consultancy that helps inventors make deals with venture groups. "You have to think: do you want 20 per cent of a company that's worth £100 million, or 100 per cent of nothing? That's a crude example, but without capital you can't get anywhere."

And capital isn't all a VC offers in return for its payoff. Most say that cash is only a small part of their overall service. Just as important is the access to useful networks of contacts and experienced business people to flesh out a management team.

Play together, stay together

As well as people networks, company networking is considered especially important to American venture groups.

How Autonomy did it

A recent UK venture success story is Autonomy Corporation. A maker of intelligent agents and pattern-recognition software, the company floated on the European stockmarket, EASDAQ, in July.

"The float raised $165 million," says Autonomy managing director and CEO, Mike Lynch. "The four founders and management team plus developers with share options made 20 per cent of that. That means we had 22-year-olds making £100,000. It's funny – we ask what they're going to do with the money, and so far there's only been three new mountain bikes around the office."

The venture groups involved in Autonomy's most recent round of fundraising, which netted £15 million, include Apax and ENIC, the English National Investment Company. Lynch says one of the VCs' most valuable contributions was advice. "Lots of young people think they don't need any help, but a VC knows how to work the system. If you're a technical person with a great idea, you'll need help putting together a business. And it's not unreasonable for venture groups to want equity in return for this help."

Lynch claims Autonomy was an attractive business for venture investment because it's run like a Silicon Valley company, with developers offered share options. "That business model is the only way to succeed. Internet businesses must be built so fast that share options are the only way to ensure your developers are really committed." Floating, he says, has provided Autonomy with development funds to continue its research, as well as to market more heavily and expand to the Pacific Rim.

Finally, he offers two pieces of advice. "First, be prepared to discuss your idea. You can't get funding if your idea is so secret you refuse to talk about it. Second, it's not good enough for an idea to be cool - it also has to be able to make money."

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American VCs talk a lot about synergy – using the strengths of one client to help another. A group that funds an Internet-connection software company, for instance, may be keener to work with a modem manufacturer than, say, a plastic bag manufacturer.

Probably the most gung-ho synergist is Kleiner Perkins Caufield and Byers (KPCB), the American group that helped get Netscape and Sun Microsystems off the ground. KPCB's Web site talks extensively about 'keiretsu', a Japanese term meaning 'companies linked by mutual obligation'. This concept apparently helps KPCB's clients 'consistently share experiences, insights, knowledge and information', though it's interesting to note how few concrete examples of this are listed on the site.

All this talk about synergy, though, begs a question: will you only be able to get capital from VCs whose existing client base complements your company? That's debatable in the UK. Of all local venture groups interviewed for this article, only Redbus (see box on page 52 for details) claims it will select new companies based on their fit with existing clients.

But at least one company interviewed said synergy was critical – but to the company, not to the VC. Mike Beeston, managing director of new media ad agency, CHBI, says a lack of synergy is why his company eventually gave up asking VCs for funding. "Having gone through the process, we found the venture groups had no empathy with us strategically. VCs just weren't familiar enough with our industry, though this situation is now changing. But at the time we wanted help, VCs couldn't offer anything beyond cash."

Eventually, CHBI decided against raising venture capital in favour of partnering with Razorfish, an established American new-media agency. "We needed a partnership that offered new media experience, international relationships, marketing promotions and business processes. We realised a strategic partnership was much more useful than just VC money."

But not everybody wants their VCs to offer business advice and contacts. Mike Kelly, managing director of Manchester telehousing service, TeleCity, claims his company hasn't asked its venture group, 3i, for much in the way of advice. "Asking VCs to run your business would be to mistake their role," retorts Kelly. "We came to 3i to get capital. As the managers of our business, we ought to be capable of finding our own advice."

Regardless, a venture group usually insists on having at least one of its advisors sit on a client company's board – TeleCity, for instance, has a VC-selected non-executive CEO, a person that Mike Kelly admits was an excellent choice for the role. As well as helping with strategy and advice, this person has another function. They help the VC to ensure its investment by making sure that the company's management team acts sensibly – in the VC's eyes, at least.

adding that last year "hi-tech companies (computer, electronics, medical, health, biotech and communications related) received more venture capital to back more businesses than any other industry grouping. A record £690 million was invested in 295 companies." That's 15 times the amount invested in technology in 1984.

"Hot areas for us include Internet security, banking, search engines and niche consumer applications."

Peter Englander, VC company, Apax

Hooking the big fish

Regardless of whether you're looking for advisors, or just want cash, you still need to know where to find a VC partner. Two obvious groups to approach are the 3i Group and Apax, which dominate the UK technology investment market. Apax helped build the ISP Demon Internet, the anti-virus software developer Dr Solomon and the IT retailers ComputaCentre. Rival 3i helped create the ISP Pipex (now merged with UUNET), network services company Fastnet, and network integrators Integralis.

Other tech-aware VCs include newcomer, Redbus. A host of previously tech-averse venture groups are also muscling into the territory, according to the British Venture Capital Association (BVCA), whose Web site at **www.bvca.co.uk** lets you order publications that offer more information about the local VC environment. It's a booming scene, says the BVCA,

Still, Apax and 3i have made the lion's share of deals. Last year, 3i claimed to have invested roughly £126 million in 122 IT companies worldwide. Its technology investments span 468 companiesvalued at around £850 million. The group's keenest interest is business-to-business technology, says senior tech investor, Barnaby Terry. "We find it difficult to support business-to-consumer proposals. They cost too much money to establish competitive advantage. Business-to-business is a bigger space with more opportunity. There's lots of value in content management for intranets and extranets, for instance. Or software fulfillment, where 3i has already supported two companies: ComponentSource, which automates fulfillment of ActiveX controls, and InfoBank, which offers a broader range of software. Net businesses are a small but rapidly growing part of our technology investment."

The perfect VC pitch

1. Present a business plan, not just an idea. While VCs interviewed for this article were divided as to how much detail the perfect proposal should include, they all agreed that a proposal has to be businesslike. Most importantly, it has to demonstrate that its writer understands how to build and run a business that develops their idea.

2. Cover all contingencies. The most basic proposal would include an analysis of potential competition, available markets, reasons why these markets want your product, and projected profits and costings. A more attractive proposal is one that evaluates the strengths and weaknesses of your management team and, most importantly, analyses potential problems – how you'll cope with cost or time over-runs, or with a better-resourced competitor beating your company to market with a similar product.

3. Know your exit strategy. VCs can only afford to invest in your company if they know a good return is likely within a reliable timeframe. They need reassurance that you won't balk at one day having to sell or float your company to make this return. If you're not prepared to give up some control, venture capital won't be an appropriate way to raise capital – try partnerships instead. 'Business angels' are another alternative – they're former businesspeople looking for corporate investment opportunities.

4. Demonstrate your track record. Bankers at heart, venture groups aren't keen to give money to people with no real management experience. If you don't have this background, make sure your pitch involves someone who does. However, you don't have to cover every management base – VCs are usually prepared to put you in contact with people who can fill management gaps.

5. Get on with your VC, because they tend to become quite involved in running their client companies, through board seats or via advisors. You need to show that you're capable of working closely with your potential partner over several years.

The new kid on the block: Redbus

Formed in only May this year, Redbus is one of the newest UK organisations in the technology venture capital industry. "We're not a venture capital group as such," says deputy managing director James Gardiner. "Instead, we try to help inventors to successfully present their ideas to venture groups.

According to Gardiner, one big difference between his company and more traditional VCs is Redbus's attempt to keep deals straightforward. "People send proposals to us via our email address, **ideas@redbus.co.uk**. We ask the ideas to arrive with a simple two-way non-disclosure agreement, also available by email. That way, applicants don't have to spend a lot of money on lawyers."

Basic business plans are OK for submission, "but more detailed plans are more useful. The majority of plans we get seem well thought through. It's rare to meet the stereotype of a crazy inventor who's only good at inventing things."

The organisation is currently working through its first round of proposals. "Because our managing director, Cliff Stanford, is the ex-director of Demon Internet and has a background in hi-tech, a large percentage of the proposals sent to us have been technology ideas. However, we're not restricting our help to technology companies."

Redbus's strategy is to only work with companies that will fit into the 'Redbus brand', which Gardiner hopes will be seen as a signpost toward British innovation. If the brand includes only credible companies, he suggests, "new companies will benefit from th goodwill created by the success of previous Redbus organisations". In return for making a company part of its brand, Redbus will take a portion of equity. "Less than 15 per cent," Gardiner says, "because it's important that inventors keep control of their company".

What tips can he offer budding inventors? "First, make sure your intellectual property is protected. You can't talk about an idea to just anyone without protection and expect to keep that idea. Second, create an exit route. VC relationships are simpler if all parties know how they'll make a return on the money invested in your company. Finally, cut as much legal jargon as possible. We're not a firm of solicitors, so the simpler our process remains, the better."

Apax, on the other hand, is willing to capitalise consumer ideas, says director Peter Englander. "Hot areas for us include Internet security, banking, search engines and niche consumer applications." Over the last year, roughly half of Apax's UK deals have been made with technology companies in the areas of telecommunications, IT and media.

Getting the pitch right

Once you've decided on a few potential partners, you need to think cleverly about your pitch. The most important part of this is a business plan. This doesn't have to be especially formal or lengthy, explains Cheese. "Any proposal more than 10 pages plus six pages of financials is too long. The proposal has to explain your idea and its unique selling properties. Provide names and short CVs of all principals in your organisation, and outline your project's market, its competition, how much money you require, and when the VC can expect to see a return. Project your profit, loss and expected cashflow for the first three years."

Part of plan-writing, says Mike Beeston at CHBI, is to decide how much capital to ask for. "Our first meetings taught us to think big," he remembers. "If you don't ask for enough money, you won't be taken seriously. In our case, we had to ask for an order of magnitude more money – not just another 20 per cent."

Having a plan is important, but it's just as important to have a strong face-to-face pitch ready for when you finally manage to meet with a VC. "To earn venture capital, you must be able to clearly explain your idea to anyone, from someone totally unfamiliar with your field to an expert," Cheese says. Mike Beeston of CHBI seconds this. "In retrospect, I look at our first meetings with venture groups as a learning experience we needed to go through. They taught us how to pitch our business to VCs, who want the one-liner that tells them whey they should invest. Something strong and visionary."

During first meetings, Cheese says a potential investee must demonstrate four qualities to have their idea considered seriously. "First, VCs want people who can convince them an idea can become a successful business. These people must show they have the acumen to run a company. That means having considered and prepared for potential problems – and deciding workable, realistic financials. As for personal skills, you need integrity and prudence, and an obvious ability to negotiate."

It's especially important to demonstrate a solid track record, adds Barrie Thornburn, sales director for NettGain, an Internet consultancy that went through a round of venture capital finance in March this year. "If you don't have a decent track record, VCs will ask for greater equity in your company to compensate for what they perceive as a bigger investment risk. To avoid this, we initially set up NettGain with our own money and didn't look around for finance until our market was established."

You'll probably have to go through more than one meeting with a VC, reports Mike Kelly of TeleCity. "But because we had a fundamentally strong business idea, we found the VC process straightforward and positive. Additional meetings were mainly to work out the fine detail in our business plan."

But eventually a VC will decide if it wants to work with you. At that point, it'll commence up to six months of due diligence. Cheese explains, "this is when a VC evaluates all potential risks before deciding to invest. It's a part of the process that inventors sometimes dislike, because it includes a credit check of your organisation's management team. Honesty is extremely important. If due diligence shows you're hiding something, the deal will be called off immediately."

"During due diligence, the VC group asks itself a lot of questions," continues Cheese. "Can the individuals involved, including the VC company, work together? Do the company principles have the discipline required? What are the consequences of potential overruns – if, say, product development takes a year rather than six months? Will the company create patents that can be kept by the VC as security? What expertise is missing from the company's existing management team? Can the company manage its growth?"

But let's say you make it through due diligence. It's at least six months after you first started looking for capital. Contacts are being drawn up. Here's where the deal is signed and you have money to start up your company. Now you're really in the hot seat. Here's where the fun begins... im

Where to go

British Venture Capital Association
www.bvca.co.uk
Phone: (0171) 240 3846
Fax: (0171) 240 3849
Be sure to order the BVCA's free booklet, *A Guide to Venture Capital*, an in-depth introduction to how VCs work from **www.bvca.co.uk/BVCA/BookList.htm**.

Apax Partners
www.apax.co.uk
Phone: (0171) 872 6300
Fax: (0171) 636 6475

Cresco
An advisor to companies seeking venture capital, not a VC itself
Phone/fax: (01354) 610 545
email: **peter.j.cheese@btinternet.com**

Redbus Investments
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Phone: (0171) 864 6400
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The 3i Group
www.3i.co.uk
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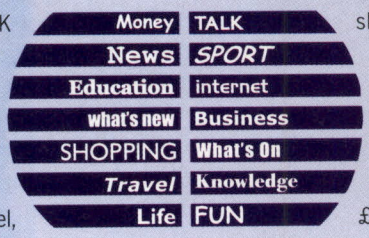

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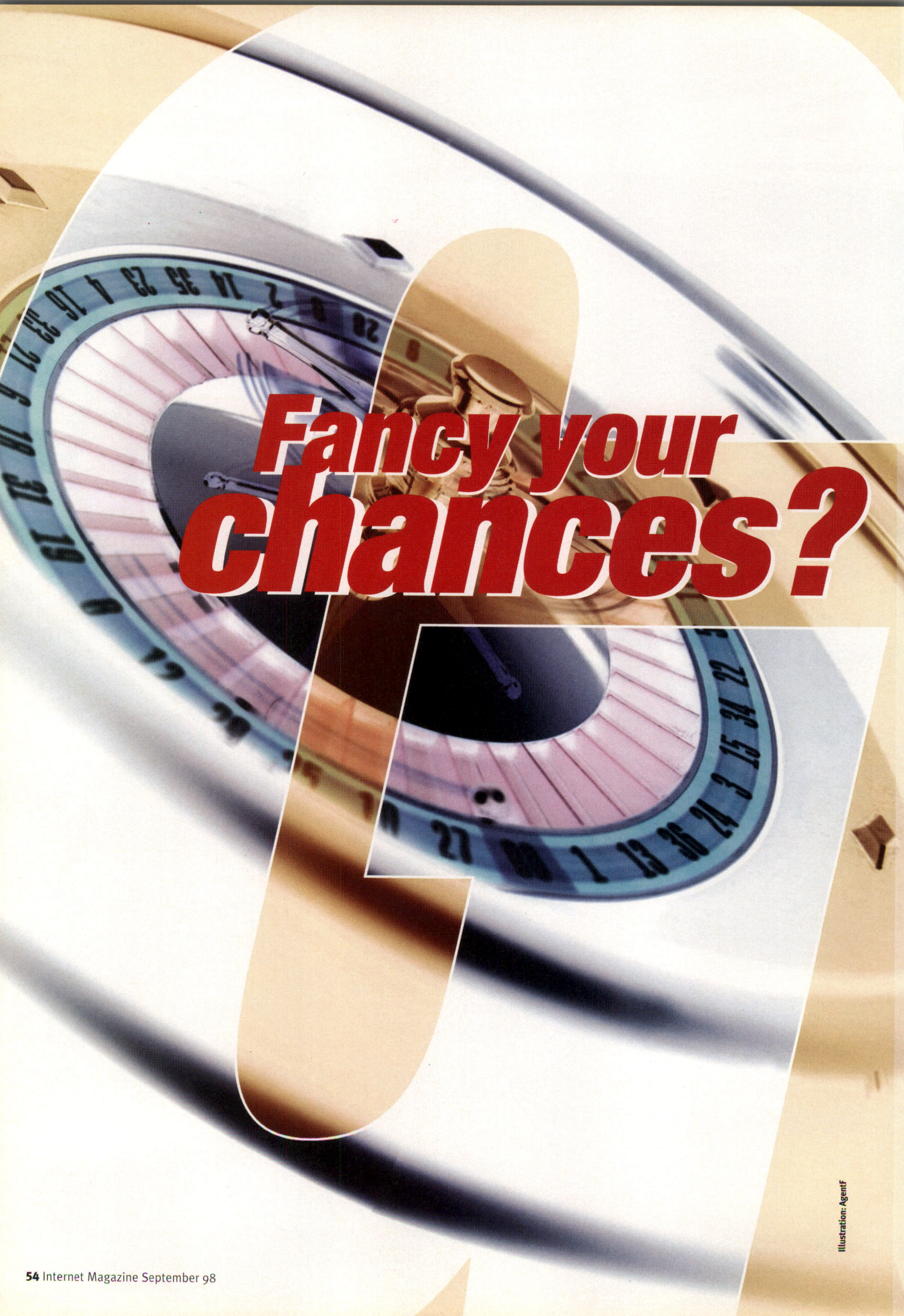

Fancy your chances?

Illustration: AgentF

The UK gambling industry has only cautiously embraced the Net. **Mike Bracken** points out why and offers you a multitude of ways to lose your shirt online

Let's face it, we're addicted to gambling. As a nation we love a flutter. If it's not the pools, the twice-weekly lottery, scratchcards or betting on all manner of sports from dogs to darts, then we can always indulge our habit on fruit machines or at the bingo. So what could be more sensible than for the UK to lead the gambling industry onto the Net? Yet we can't do it. We're outstripped by new Net bookies and betmakers, and it's all the fault of one man: Gordon Brown.

Yep, that Gordon Brown. Now I've nothing against the man personally, although with that dour Presbyterian demeanour and his non-endogenous growth policies, I've not exactly got him marked down as an inveterate gambler. It's just that as he happens to be Chancellor at the moment, he's the man who insists that a fair percentage of official wagers find their way into the Government's coffers. Which is a bit of a pain, and may also explain why there are so many otherwise unremarkable people, such as myself, who seem to have an uncanny grasp of their nine times table. Confused? Then let me explain.

Many people in this country never go into a betting shop and would blanch if you described them as a gambler, despite regularly buying lottery tickets, scratchcards and the like. Yet for those of us who worship the great bookmaker in the sky, we know exactly how the Government takes its money.

Let's say I walk into a bookmakers and put £100 on Liverpool to scoop next season's Premiership. A certainty at odds of five to one. So I fill out my betting slip and hand over £109 to the cashier. Yes, that other £9 is for Mr Brown. Which is why I don't like him much.

Now although this is the most obvious of gloomy Gordon's schemes to tax gambling, all of our flutters are taxed. Whatever you wager on, you can guarantee that a percentage will turn up at the Treasury. Which is why politicians are getting very testy indeed about the head-on collision between the Net and the gambling industry. Let's say I place my bet online. Sure, I save the £9 tax, which is great for me as I simply have an additional bet on West Ham fans making David Beckham cry, but by moving the transaction online we create an additional set of problems.

* Take these tips...

Yes, I know every mug punter thinks he or she is the world's best tipster, but I've got a few tips about the legal and financial minefield of online betting. Theoretically, online gambling is an aid to both punter and bookmaker. For a start, it's more immediate than telephone betting. You can access a far wider range of odds and get better value for your money than is possible on the high street. Even if your interest is happening far away – say an Australian Rugby League Match or a US NFL game – you can get an online betting shop there to take a bet. Real-time betting and spread betting, the growth areas of the 90s gambling market, should lend themselves to the Net. And with advanced money management software, you can keep an close eye on your winnings from your desktop. So no problems then? Well, not quite...

This gambler's idyll is a lot further away than it appears. For a start, Mr Brown and his pals are none too chuffed at the thought that our nine per cent levy will disappear into the ether. So much so that our big bookmaking chains are now in the ludicrous position of being able to offer online betting services to anyone in the world except their regular customers in the UK. And then there are the technical problems...

Authentication Let's say someone sets up a spoof gambling site. You hand over your credit card number in good faith and then wait in expectation for your winnings to appear. Unfortunately, the site creators are long gone, and they've taken your money with them. To make this situation worse, it's likely they won't be in the UK, which makes taking legal action against them all the more difficult.

Validation Now we've all heard the one about the cheque being in the post, but what happens when an email doesn't turn up? Unfortunately, this does occur from time to time, but what happens if the one email that goes missing is the one you sent placing £50 on Manchester United to be relegated come the end of the season. Just as you've stopped laughing with joy at watching Ferguson & Co moan their way gracelessly out of the top flight, your online betting shop starts saying things like 'What email?' Oops. You know you sent it but they claim they never got it. And they don't pay out lightly.

Currency Ideally you should be able to place your bet and use the strong pound, but who does the currency translation, and at what rate?

Immediacy A lot of betting, whether it's on the stockmarket or on spread betting, depends on immediate access to changing odds. So you need to know the exact price. If your email is delayed, or if your Net connection is very slow, or even if you're using a cached page, then you could be working with the wrong odds, and that costs money.

Security Yep, that old bugbear. For a start, you want to check how secure your details and transactions will be treated by the online betting outfit. You could use encryption, but given the way Government policy is going, it's unlikely that online betting houses will be using it anytime soon in the UK.

There's no easy solution to these technical problems in sight, and the Treasury is hardly likely to waive its nine per cent cut of the £6.6 billion we punters spend on off-course betting each year. For a nation of devoted punters, this is a grim situation. But it needn't be so.

In the US, open gambling as we know it is unheard of. You won't find the equivalent of a Ladbrokes or William Hill on street corners over there, and individual states, as well as the federal Government, are as keen as mustard to clamp down on illegal betting. Indeed, one reason Las ➤

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Vegas is so popular is because gambling in many other states and cities is prohibited or at least strictly licensed. Which makes it all the more galling to see the US race ahead of us by offering a range of betting services that far outstrip our measly online efforts.

When the US betting companies saw the potential of the Net, they raced to set up casinos and sports betting operations. But because the US has such strict anti-gambling laws, most of these sites were set up outside the country. Many, such as Aceinthehole.com, moved their online operations lock, stock and barrel to Costa Rica to avoid the Federal Wire Communications Act. This long-standing act was designed to stop companies betting across state lines, but as many US companies simply obtained licenses abroad, it was rendered useless. Although US authorities and some individual states are pressing for a new Bill which will outlaw online gambling altogether, analysts' predictions estimate that the US market will be worth $8 billion by 2002.

All of which puts us to shame, really. Now I know that we have taxation and technical problems, but even as a fully paid up member of the 'keep bookies grimy' lobby I can't help thinking that we could make a better stab at online betting. We already have online sports services and lotteries and a market just waiting to explode. It's only a personal view, but I can't help thinking that our entry to Net gambling should include a complete makeover for the gambling industry. Horse-racing still has the Tote as a leading player – not exactly a proactive, go-getting outfit. Placing a bet on any event other than the most popular sporting ones is particularly difficult, and the absence of independent betting organisations robs the punter of a variety of odds.

To prove the point, consider how we determine odds. It's common for punters to be given odds of 11/8 or 100/30. Why not the more sensible French system, say 3.4 to 1. It's because our odds are still based on the old pre-decimal system, where odd numbers of one coin made an even number of others (No, I can't tell you which ones, I wasn't born then.) Such is the arcane nature of gambling in the UK that the customer has to put up with a more difficult system of odds because the industry hasn't yet managed to accommodate a system of decimalisation that has been with us for nearly 30 years. Maybe gambling needs a new medium, the Net, to bring it up to date. What's for certain is that if a brave politician helps the industry to crack the taxation and technical problems currently blocking its adoption, then there'll be no shortage of punters.

If you've got the money, you can fritter away your readies online. We look at five ways to do it in the UK

* Bookies

The UK bookmaking scene is dominated by three companies: Ladbrokes, William Hill and Coral. Yet on the Web, the services they offer are limited. The Ladbrokes site gives limited information about football odds, its telephone betting number and various contact and hospitality details. When we asked Ladbrokes why it offered such a limited range of bets, we got a straightforward answer. "The two issues are tax implications and security," says their spokesman Andy Clifton, who ➢

The small print

Fact you don't see many poor bookies. Like insurance companies and banks, bookies are far from keen to pay out if they can at all avoid it, and as such rely on a series of rules and regulations extremely favourable to them. Appallingly, this appears to have got worse online, and the rules governing the Net based wager strongly favour the bookmaker. Let's take a look at City Index, one of the leading lights of the UK online gambling scene.

* You agree that, if a third party or your servant, agent or employee uses the Betting Service(s) or Our Web site in any way using your account (or on your behalf), you shall nonetheless be bound as a principal by all terms and conditions herein, and you hereby fully indemnify and will keep Us indemnified in respect of any failure on the behalf of such third party to fulfil the terms and conditions herein.

So, it's your fault if hackers or someone with City Index rifles your account.

* We disclaim any and all loss or liability resulting from, but not limited to: (1) loss or liability resulting from access delays or access interruptions; (2) loss or liability resulting from data non-delivery or data mis-delivery; (3) loss or liability resulting from acts of god or other circumstance(s) beyond our control; (4) loss or liability resulting from the unauthorized use or misuse of your account number or password; and (5) loss or liability resulting from errors, omissions, or misstatements in any and all information or services(s) provided under this user agreement.

Power without responsibility? It looks like it...

* You agree to release, indemnify, and hold us harmless on demand (and keep us so indemnified or held harmless) against any claim brought against us by a third party resulting from or in connection with your use of the betting services or our Web site in any way and your use of our server and in respect of all losses, costs, actions, proceedings, claims, damages, expenses (including legal costs and expenses) or liabilities whatsoever suffered and howsoever incurred by us in consequence of or relating to your non-observance or breach of this user agreement or from the services provided.

But City Index isn't alone. Most bookmakers insist on these types of clauses, so make sure you check the rules and regulations before you hand over your credit card details.

couldn't put a date on the introduction of online betting.

Although it's the same situation at Coral's site, William Hill has taken a much more ambitious line. Its tax-free online betting service takes online bets on English, German and Italian football matches and is due to offer a wider range of bets soon. Registration is easy, and the minimum bet is £20. Unfortunately, you can register if you're in any place in the world from Azerbaijain to Western Somoa, but you can't register if you live in the UK. Nice one, Gordon...

Just because the big boys are dragging their feet it doesn't mean there are no innovative racing sites. The most successful so far has been BET Online, a joint venture between spread betting outfit City Index (see page 57) and PA Sporting Life. As it accounts for tax (at the lower rate of 7.5 per cent), it's open for UK users, and before the World Cup started it took over 15,000 online bets. (**www.betonline.co.uk**)

Small independent tipsters and information services have sprung up online. Kingsdown Racing (**www.kingsdown-racing.co.uk**) and online publications like The Wire (**www.raceuk.com**) provide extensive information services. But perhaps the most interesting sites are the small, high-volume bookies. Bookmakers such as Victor Chandler (**www.victorchandler.com**) have, for years, accepted large stake bets, usually by phone. Now its advanced Web site allows bets to be staked in US dollars, UK sterling or Hong Kong dollars. Sites like these reflect the wide variety of sports that people now bet on but, alas, you're not allowed to place a stake if you're in the UK.

* Stocks and shares

The biggest gambling opportunity of all, the stockmarket, is nowhere near as restricted as the rest of gambling on the Internet. As many Net companies rely on the stockmarket to fund their growth, there's been an entrenched stock ethos on the Net since Netscape decided to turn the financial model of initial public offerings on its head. As well as a plethora of information sites, notably the Edgar archives where you can read companies' submissions to the US Securities and Exchange Commission, there are dozens of online stock traders.

Existing agencies, such as Charles Schwab have moved online. Its Charles Schwab Europe service (**www.schwab-worldwide.com/europe**) lets you trade UK and US securities online. However, there's a new generation of brokers which exist purely because of the Net boom. E*Trade (**www.etrade.com**) is one of many of these start-ups, but for the real lowdown on online trading, we recommend the Motley Fool. In 1993 David and Tom Gardner founded this online service which gives a useful, if relaxed, view of the online stock scene. (**www.motleyfool.com**)

Indeed, such is the opportunity presented by the Net that real stock exchanges have taken the plunge. The UK Stock Exchange is online at **www.raceuk.com**, and provides a wide range of information plus details of the electronic trading system. But it's in the US where online stock trading has really taken off. The Nasdaq site at **www.nasdaq.com** provides quotes (delayed by 15 minutes), portfolio monitoring, market statistics and a variety of information services.

* Spread betting

Spread betting is a 90s phenomenon. It involves buying and selling predicted outcomes on an event (such as the number of runs hit by England's opening batsmen in a particular innings) and then trading that buy, much in the same way as stocks are traded on an exchange. Unsurprisingly, this type of betting is popular in the City and, as such, lends itself to the Net. Again, services like City Index have led the way with online spread betting, and they've been joined by other services like Sporting Index.

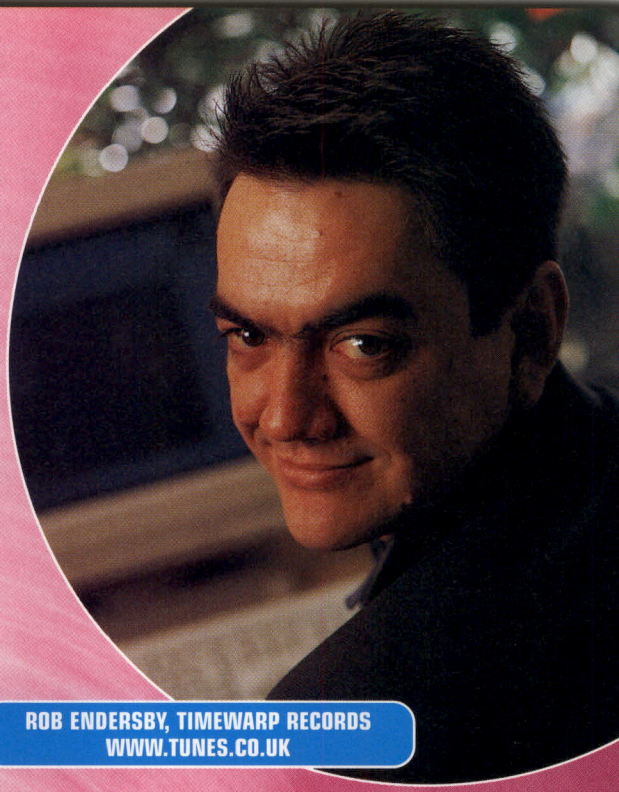
Since its spread betting launch in mid-May, Sporting Index has widened its service and now offers live spreads updated second by second. Yet Julian Barkes of Sporting Index points out that the immediacy of spread betting (where you need to sell or buy a spread as a ball is bowled or goal is scored) demands more immediacy than email, so he expects that telephone betting will work hand-in-hand with the online service. Nevertheless, with a 500 per cent increase in bets placed during this World Cup over Euro 96, and over £10m placed on this World Cup alone, the spread betting system online is one of the fastest growing and most lucrative forms of online wager.

* Casinos and lotteries

The growth of online casinos has been mostly confined to the US and Australasia, but there are some UK based casino services. Casino's UK (**http://homepages.shu.ac.uk/~splatts/index.htm**) operates as a gateway to Worldgaming Net (**www.worldgaming.net**) where you can play casino games online. The British Casino Association (**www.british-casinos.co.uk**) provides a full round-up listing of UK-based casinos.

More to the public's taste in the UK are lotteries, and especially the National Lottery. Although you can't yet choose your National Lottery numbers online, there's no shortage of 'advisory' sites where you can get details of which numbers have been picked in previous draws through to software downloads of predictor programs. im

A few words of ENCOURAGEMENT if you have ambitions on the Internet...



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CRAIG ANTILL, TITAN GARDEN BUILDINGS www.titan.uk.com

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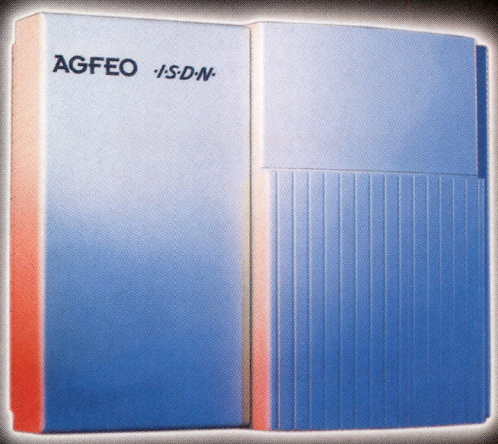

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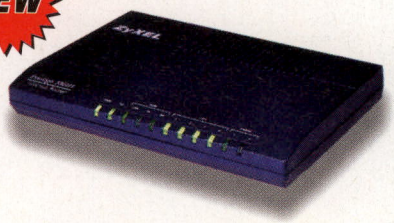

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Essential Viewing

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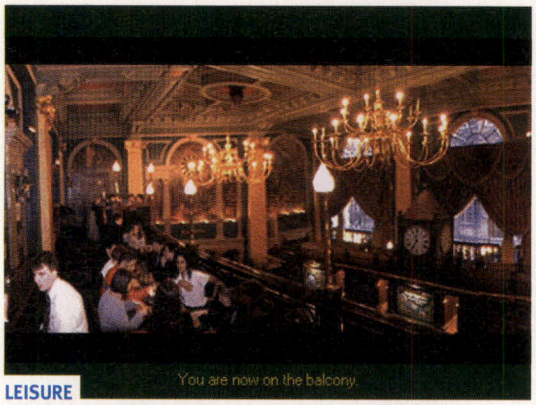


LEISURE

A pub that's open all hours

Fancy a drink but can't make it down the pub? Click yourself down to Fullers's site and its canny Shockwave virtual tour of its London pub, The Old Bank. The hefty file is worth the download wait and although the site stops short of a full online brewery tour, you'll still get hooked by Fullers's own Jilly Gouldenesque wine buyer Roger Higgs. And you won't have to wait for a taxi home.
www.fullers.co.uk

Fresh from the land of cuckoo clocks, chocolate and penknives, Swissair's site provides customers with direct booking options, real-time arrival and departure information, and hotel bookings. But Swissair isn't stopping there. Plans are afoot to let customers book their own seats.
www.swissair.com

The Best of British Mail Order aims to get all online UK mail-order companies together under one roof. It tells you which sites have secure servers and shopping basket options. The content is way ahead of the design, but don't let that put you off this useful resource.
www.fletel.co.uk/mail

Designer of the award-winning site, New Car Net (**www.newcar.net**), Netro Communications, has set up a sister site, Topcalc, which gives you a breakdown of car running costs.
www.topcalc.co.uk

But if you're more of a Bugatti fan, Classic Cars World Online is for you. Swap tips and info, check out the events calendar and see what's for sale. There's a range of interactive features including restoration tips and product tests. And plans are underway to preview sales information for specific lots at auctions.
www.classiccarsworld.co.uk

Feeling a bit jaded? A couple of visits to the Pro Plus site should pep you up. The style is online dance scene, and the content is fast and furious. There's shedloads of free goodies including screensavers, postcards, icons and wallpaper. A what's happening e-zine acts as a guide to your local area, and there are plenty of useful links.
www.proplus.co.uk

Slighly less up beat, the National Federation of Women's Institutes (yes, the WI) has taken its 260,000 members, raffles and coffee mornings online.
www.nfwi.org.uk

The Give As You Earn site outlines the benefits of a scheme set up by the Charities Aids Foundation where people can donate whatever they want straight out of their pay packet.
www.giveasyouearn.org

Check out the additions to the glam and very green Fuji Film site. Cameras from the Fontonex range have been added to the site along side a Shockwave movie clip of the 3500ix flagship camera.
www.fujifilm.co.uk

London's tourists can now download maps of the underground and a PDF colour brochure in 13 languages from the London Transport site.
www.londontransport.co.uk

Above ground, Central Train's most original feature is an interactive map. The site is integrated with Railtrack (**www.railtrack.co.uk**), so all UK rail networks are covered.
www.centraltrains.co.uk

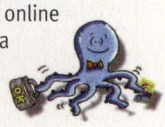
Fancy yourself as a bit of a musician and aching to get your Web site out to the wider world? This could be just what you're looking for.

unsigned-music.com

Unsigned Music hosts around 80 (mainly US) bands, but is growing. There's potential for 1,000 artists to add themselves to this site, so there's no rush.
www.the-unsigned.com

Then go to EastWest Records, which has gone Shockwave crazy for its new act – Ghostland. Their site has a host of cool tricks.
www.ghostland.co.uk

These days, a new and independent online bookshop is a rarity. OK UK Books caters for children and hasn't yet been bought up by Amazon. Get your fill of Paddington Bear and Roald Dahl here.
www.okukbooks.com



And specialist sports bookshop, Sportspages,

HERITAGE

Click through history at Boughton House

More and more stately homes are taking up residence online, but top of the Web heritage pile is Boughton House. The site, compiled by Glass Page (**www.glass-page.co.uk/**) and a team of researchers at De Montford University (**www.dmu.ac.uk/**), has embraced a host of technologies with some style. You'll find QuickTime VR views of the rooms, panoramas, video clips and quality images.
www.boughtonhouse.org.uk

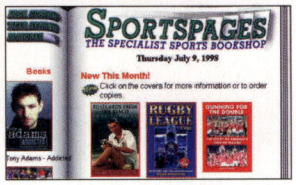
eyor

phone calls are expensive. So save time and this month's essential sites

ART

Take a stroll around WebMagick

This virtual art gallery presents art from the 19th and 20th centuries. You've got them all here, your pre-Raphaelites, your symbolism, surrealism and art nouveau. Plus you'll find a bookshop, screensaver, postcards and an art forum.
www.webmagick.co.uk



One company not short of footwear has added a secure server to its site, allowing online buying. Visitors to the HI-TEC site can check out the range of shoes, enter a competition, and watch cutting-edge animation. **www.hi-tecsports.co.uk**

has now put its entire database online.
www.sportspages.co.uk

Safeguarding the forests is Forests Forever's simple message on its simple site. And you can win a pair of Timberland Boots.
www.forestsforever.org.uk

Just the thing for the Youth Hostel Association, which has relaunched its site. Information on its 237 UK hostels is useful, but the search facility is still slow. Plan your route using the interactive map instead. But many hostels don't have an email, so expect to make a telephone reservation.
www.yha.org.uk/

Pontins has opted for a site that's fun, friendly and fast. Request brochures, email your holiday requests, and let the kids play the online games.
www.pontins.com

There are now over 70 gas tariffs, so this site's with its free online tariff calculator is well worth checking out. Just type in your yearly gas bill and you'll be presented with the five best prices from gas companies around the UK
www.buy.co.uk/

Got a rowing machine? Got a Net connection? Then get yourself membership of the Oxygen Club. Plug your rowing machine into the back of your PC, download the software and you're ready to start sweating
www.oxygenclub.com

Oi you! Yes you, lardy. This site should make you sit up and sweat. It's designed to make you think a bit more

about your activity patterns. Nifty Shockwave Flash 3.0 technology gives the site a 'you don't know squat' feel.
www.active.org.uk/

Or just relax, take care of yourself and chew on Mr. Reach's tips for teeth and pearly white oral health techniques.
www.mrreach.com

Shockwave seems to be flavour of the month, as the new Mattel HotWheels site is now all shocked up and ready to play.
www.hotwheels.com/speedcity/raceway/rw_xvframe.html

Bored with your games? The Games Terminal could help. Members buy, sell and swap secondhand titles.
www.gamesterminal.com/

Email friends with daily rib ticklers from the staff at OrbitNet. But they're the one's laughing, as the site's so successful it's looking for commercial sponsors.
www.freejoke.com/

Joking aside, Atticmedia is campaigning for London pubs to stay open until 2am. And it's not because the folks there work late and don't get out in time for a pint.
www.the-attic.co.uk/

Why do they *do* that?

Having mentioned the *Swap Shop* site last issue, we've been inundated with children's TV sites. Bit of a gunge fetishist this one, so plenty of *Tiswas*, *It's a Knockout* and *Noel's House Party* with occasional appearances from the *Blue Peter* team and *Crackerjack*.
www.warwick.ac.uk/~miapd/gunge/gunge.htm

Reader Adam Burton found this one searching for the Bert is Evil site. Here Bert and Ernie's Gay Lifestyle Guide rubs up against suicidal messages from Kermit, and Miss Piggy's orgasm addiction.
www.ziplink.net/~zbrett/sesame.html

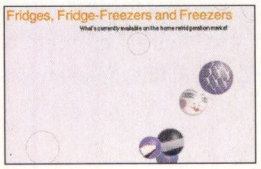
Tony Hart celebrates 46 years on television by looking the same now as he did when presenting *Vision On*. Catch him doodling his own site and check out Tony's art box.
http://homepages.nildram.co.uk/~artbox

Handbag is the site for hair, nails, diet, beauty and gossip. It's all part of the ranting of linguistics student Paul Baker and well worth reading. It has its own section on trash TV and frivolous film. Future articles planned include Coming off Bingo – it needn't be cold turkey, and How tights can save your life.
www.ling.lancs.ac.uk/monkey/ihe/paul/handbag/home.htm

The Miserable Old Git epitomises a rather warped British male type of humour. MOG, as he's affectionately known, has had a makeover and reckons the site's now in even worse taste. Remember, all of the banner ads are spoofs, so don't be taken in by tales of horny housewives.
http://fenet.net/mog/

This site was our award for top domain name of the month. It currently carries an impressive 6,000 jobs from 340 recruitment agencies.
www.gisajob.com/

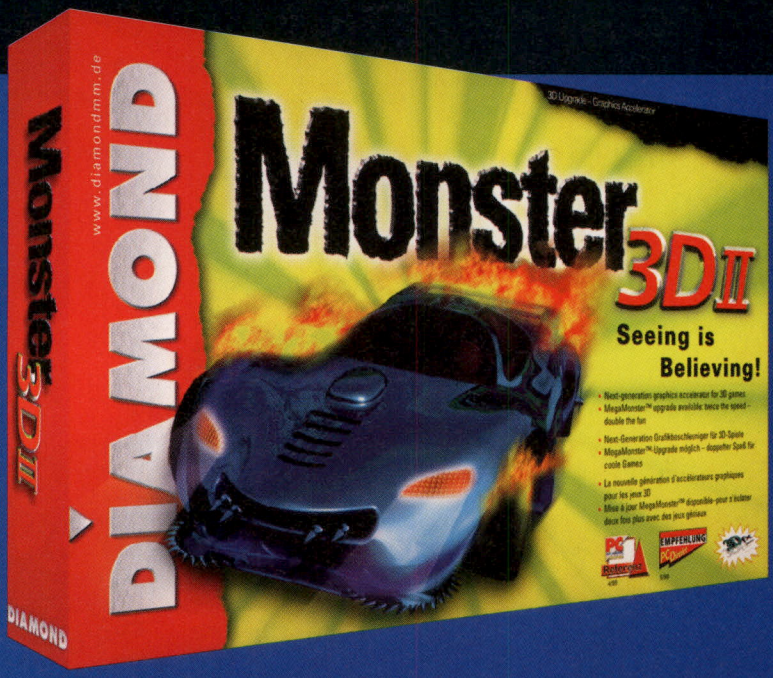
Carping on about it's new Goldfish site, CHBi is promoting the consumer guides now offered by Goldfish. Order and they'll arrive on your doorstep within 48 hours.
www.goldfish.com



Apologies to Virgin Cola, whose site we reviewed last month. The ratings should have been:
Design ★★★★☆
Content ★★★☆☆
www.virgin-cola.co.uk

Market leading upgrades that pack power into your PC...

No. 1 in PC Zone's sound card review, scoring 91%, June 1998.



"Games suddenly appear so new and shiny you'd think the Lord himself had been in charge of designing them."

Loaded, July 1998

"...turned an otherwise moribund machine into a viable 3D games platform."

PC Direct, June 1998

"This superb model has been at the top of our modem tree for months. It's hard to believe it could be beaten on price."

PC Advisor, August 1998.

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SPOTLIGHT ON...

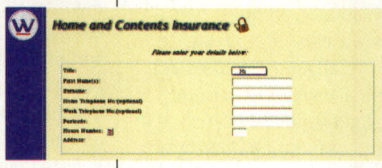
Buying insurance online

The world of insurance might not fill you with excitement, but buying it online certainly has its advantages. You can get quotes and compare prices at your leisure, and no representative will call. Ruth Allen looks at the best and easiest ways to cover yourself online

If death and taxes are the only certainties in life, insurance comes in a pretty close third. And shopping for an insurance policy is a painful process. Open the Yellow Pages, or the money sections of the Sunday papers, and you'll find a bewildering array of companies flogging insurance. Until recently, you had to painstakingly work your way through the phone book, rely on a broker to find the best deal for you, or just take pot luck and settle for the first quote you get.

Proving useful

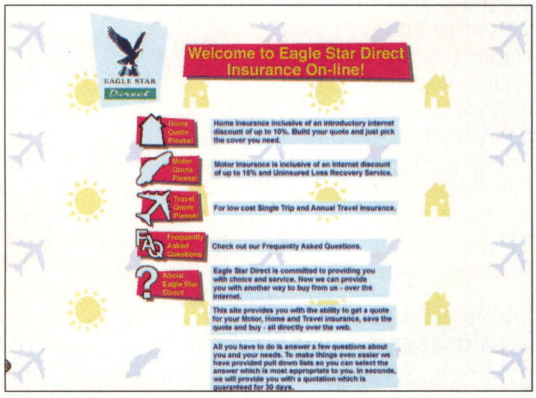
Unsurprisingly, the financial services sector quickly got wise to the potential of the Internet. Looking through the sites, it's interesting to see that some of the most useful sites have sprung up from smaller companies rather than the big household names. Despite their massive resources, many of the major market players are only using the Web as an online shop window. Some of the biggest are among the worst offenders: Commercial Union and Royal Sun Alliance, for example, have spent a lot of money on digitising their corporate brochures and ignoring the commercial potential of the Web.



Woolwich

Whether you're with the Woolwich or not, it'll give you an instant household buildings and contents insurance quote with its premium calculator. You can only buy home cover policies online, but they'll send you a car quote by email or post, or phone you back with the details. The forms are clear and simple and while the site is bland, at least its lack of bandwidth-clogging graphics keeps it fast.

www.woolwich.co.uk



Eagle Star

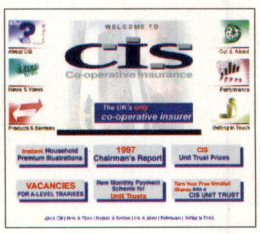
Eagle Star has taken the Web to heart. Not only was it the first to sell motor insurance over the Net, it also offers a 15 per cent discount on online orders of car and travel policies. Insomniacs can buy car insurance in the middle of the night from the 24-hour, seven days a week Eagle Star support team. And if you're really having trouble sleeping, just print out the full policy details and you'll be snoring before you can say no claims bonus. The site is well-organised, easy to navigate and goes to great lengths to reassure prospective customers about security. Less impressive, however, was the length of time I spent watching an animated GIF of an angel fish while, according to the site, I was waiting for the database to download. And while you can save a quote for up to 30 days – ample time to shop around – if you want to change the details you have to start all over again. This is a drag, as Eagle Star, in common with all the insurance sites, has a long and tedious questionnaire.

www.eaglestar.co.uk

Co-operative Insurance

The Co-operative Insurance Society's dull-but-worthy site will also give you an instant household premium quote, but you can't buy online. They'll email you a motor quote too, if you can be bothered to fill in the form.

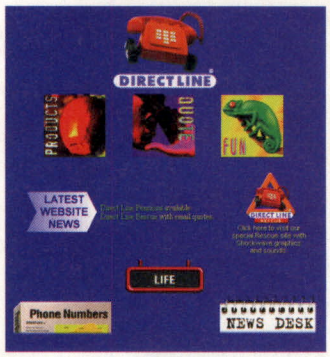
www.cis.co.uk



Direct Line

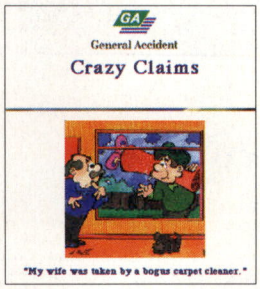
Direct Line doesn't currently offer online ordering, but says its Email Express Quote Team will get back to you within 12 working hours with an estimate for home or motor insurance. If you like the look of the deal, you still have to speak to them direct to confirm details and arrange payment. Their one saving grace is that you can use the email form to get them to call you at a convenient time, but despite a brave attempt to add extra features to its site with online savings and mortgage calculators, it's a bit of a disappointment.

www.directline.co.uk



General Accident

At least General Accident's offering has a bit of personality. You can check out the Crazy claim of the day ("I lost my engagement ring while worming a cow" is a personal favourite) and get instant travel quotes, but there are no online transactions here.

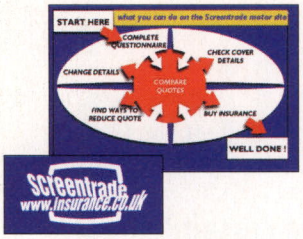


www.ga.co.uk

Shopping around

The drawback with all these sites, of course, is that you're only getting details of one company's products. If you want to shop around online, then take a look at Screentrade's impressive offering. Put together by Misys, which cunningly happens to have both an insurance brokerage and a computer solutions company in its product portfolio, the Screentrade service gives you instant quotes from up to eight of the biggest insurance companies, including heavyweights such as Norwich Union, Sun Alliance and Bishopsgate.

Once again there's an exhaustive questionnaire to fill out, but moving around Screentrade is relatively simple. It's divided into manageable sections and Info buttons provide help with answering the questions. An ingenious traffic light system tells you which bits you've completed and politely prompts you if you've missed a vital detail. When all the lights are green, just click for your quote, and if you make a note of the



session number you can go back to it up to a week later. This is particularly handy if you need to search the house to find your existing insurance policy, for example, or if you want to see if you can get a better deal elsewhere.

Perhaps the most innovative feature is the Reduce Your Premium facility, where you can immediately see the effect of, say, increasing the excess or reducing the numbers of named drivers. The database engine will generate a couple of these automatically and show you the saving effect on the lowest quote, or you can fiddle with them yourself to see the impact on your payments. However, some insurers may not wish to quote on the changed details: I lost two of my options by changing from comprehensive cover to third party only.

At the quote stage, you get the chance to compare the main differences in policy details and claim procedures, then once you've chosen you can pay online by credit or debit card or by calling the Screentrade helpdesk. The latter approach may be preferable if you want immediate cover, as you're not insured until you get an email back from them, though they will endeavour to send it within 30 minutes if it's sent between 8am and 8pm, Monday to Friday, or 8am to 6pm on Saturday. Screentrade is certainly setting the pace in motor insurance, and if its household service proves to be as impressive when it launches in early autumn, it'll be a winner.

www.screentrade.co.uk

Quotewizard

For those less concerned about immediate ordering and who want to get as many quotes as possible, there are a number of services that take the legwork out of the process. Take Quotewizard, for example – developed by brokers Newman and Partners, it claims to trawl through an amazing 200 insurers to find the best deal, and when it's found it, the details are whizzed to you via email within 24 hours. Best of all, it has a quick quote option with a cut-down questionnaire for motor policies, useful if all you want is a rough idea. This is probably the most friendly of all the insurance sites, though they do push the wizard joke a bit too far at times...

www.quotewizard.co.uk

Choosing car insurance

Similar in approach, albeit on a lesser scale, is the Car Insurance Centre which gets you quotes from Admiral, Commercial Union, and Gladiator, among others.

www.carsource.co.uk/cic

CarQuote operates in a similar way, but using a slightly different list of insurers. You fill in a form and you're contacted direct by the policy provider.

www.carquote.co.uk

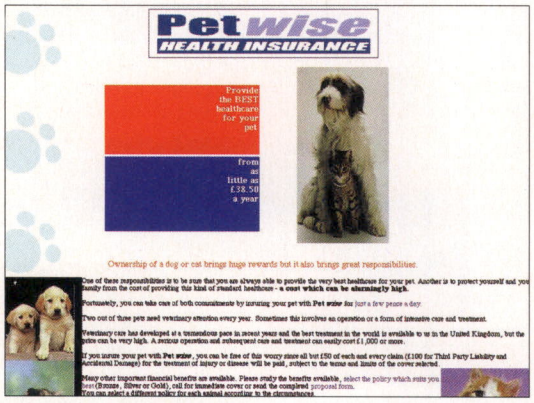
Both have sister sites offering similar services for home cover.

Travel insurance

Few companies will sell you a travel insurance policy over the Net, but several provide quick calculators or, at the very least, tables you can print out and compare. It's worthwhile doing your homework if you're after annual or family cover, but for short trips, the time you invest trawling through individual company sites may not be worth the few quid you save. Let the Insurance Centre do the work instead, and you'll have around 10 policies to choose from.

www.theinsurancecentre.co.uk/travelForm.html

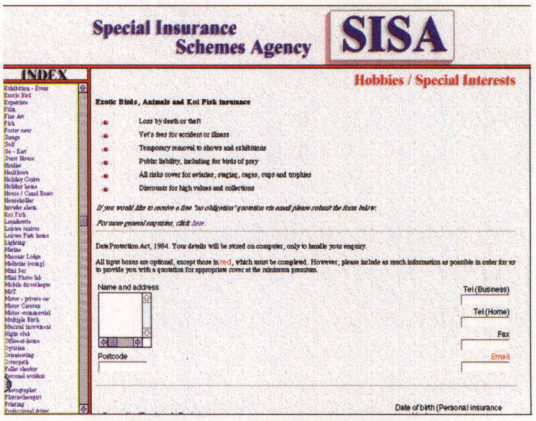
Backpackers should lug their rucksacks down to **www.nomad-insurance.co.uk**, where they can insure themselves against all sorts of holiday nasties and pick up a list of mumsy travel hints to take with them.



Pet Insurance

If the Rover you're looking to insure has four legs rather than four wheels, then try the Woolwich, Hill House Hammond, or Petwise. Vet bills can be crippling, and for the price of a few tins of dog food you can make sure you don't get caught out. Best of the bunch is the Special Insurance Agency, which covers anything from Koi carp to tarantulas as well as the more obvious pets, though none of these sites currently allow you to pay online.

www.hhh.co.uk
www.swireblanch.co.uk/petwise
www.sisa.co.uk



Special Insurance Agency

As the name suggests, the Special Insurance Agency deals with all sorts of unusual insurance, including rain on your wedding day or the possibility of twins if you're pregnant. There's practically nothing that a broker somewhere won't cover, as a trip to the Lloyd's of London Web site will prove. Gourmet Egon Ronay had his palate insured with them for £250,000. Check out **www.lloyds.com** for lists of other strange insurance requests. Mildly amusing in a pin-striped sort of way, the site has a list of brokers, one of whom will even protect you (financially at least) against accidental insemination by aliens. If you've got a head for heights, take a virtual reality tour round the Richard Rogers-designed building while you're there.

www.sisa.co.uk

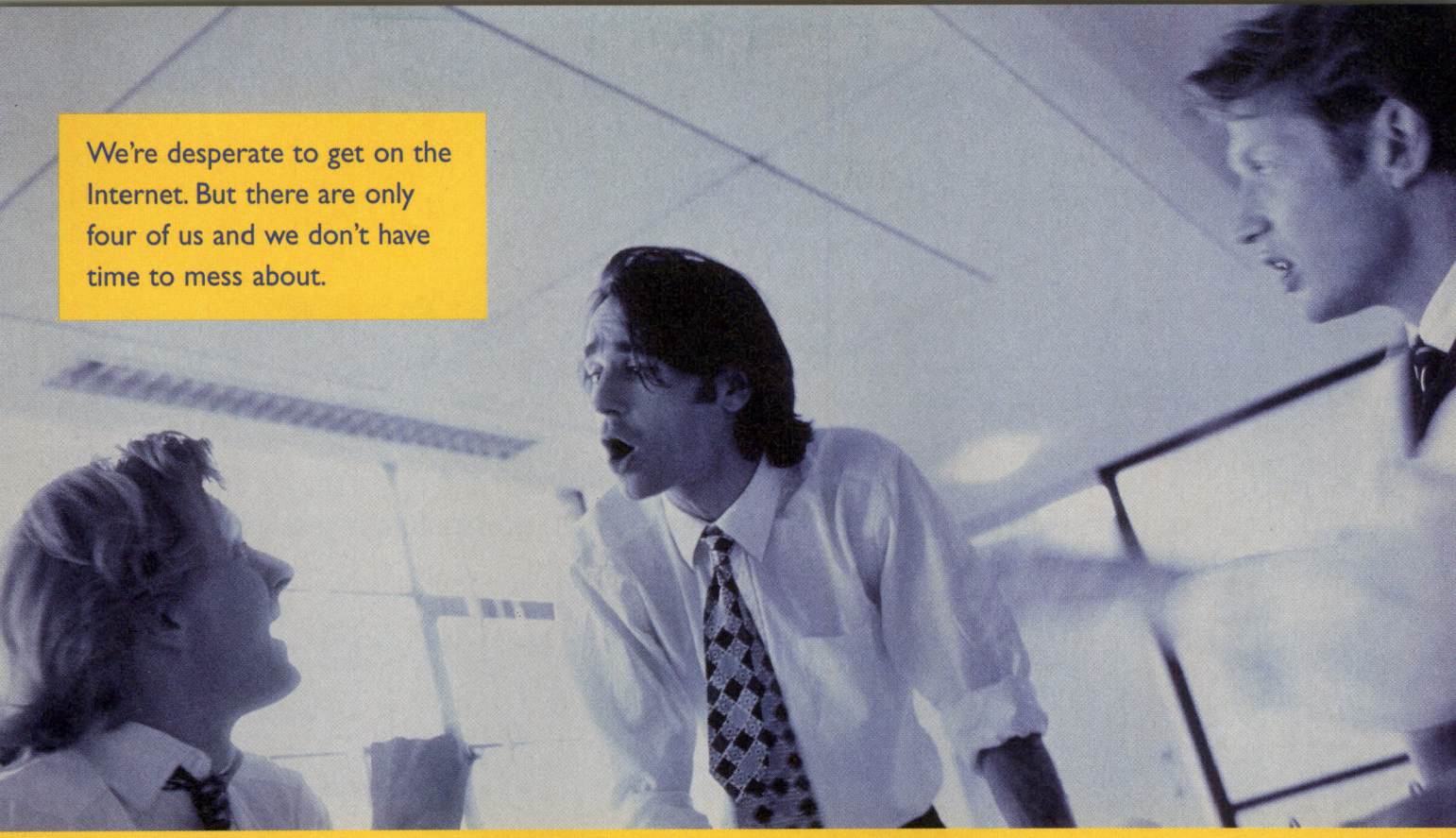
Globetrotting bungee-jumpers can combine travel and dangerous sports insurance with Sportscover Direct, which covers anything from skittles in Sweden to parascending in Paraguay.

www.sportscover.co.uk

Strengths and weaknesses

While the Web is still far from being the economists' theoretical perfect market, current offerings go some way towards increasing consumers' ability to shop around. It's still a tedious process, but infinitely preferable to being held in a queue and told you'll be answered shortly. Typically it'll take about half an hour of form-filling to generate a decent pile of car or house quotes – about as long as it takes to speak to two companies on the phone. All the questionnaires are slightly different, so there's no magic way of cutting down on the form-filling. So, if you're seriously looking for the best deal, it's worth pulling together and saving all the details you need before logging on. You'll need make, model and engine size for car quotes, plus details of your existing policy and no-claims bonus if you're lucky enough to have one. For household quotes, make sure you know what buildings sum insured your mortgage company needs, check when your policy is up for renewal, and have a list of any high value items to hand. With a bit of initial planning you'll be able to canvass a huge number of companies and ultimately save a packet on your premiums.

ON THE CD You'll find links to all these insurance sites on our cover CD



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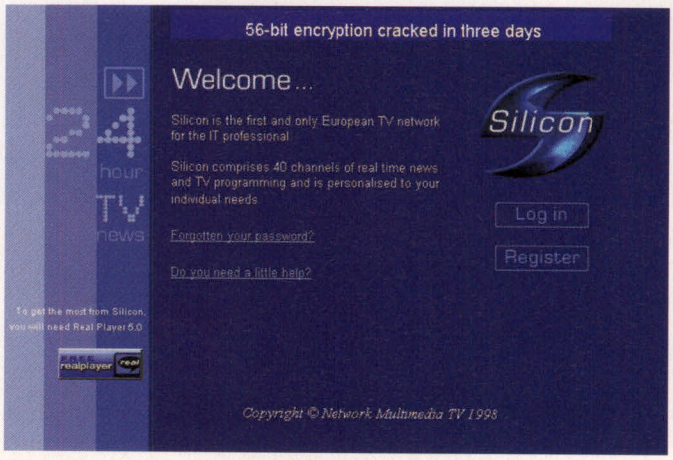
SITE OF THE MONTH

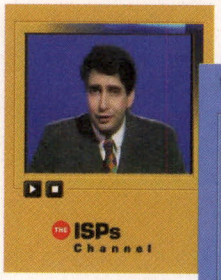
Good news travels fast

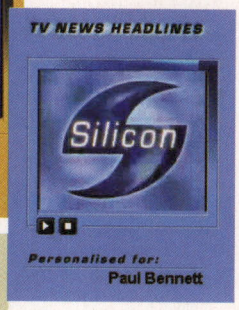
New Media Television (NMTV) has taken a leap of faith and launched the first ever European television network that's broadcast to your desktop. But do IT professionals really have the time or the inclination to wait for all those downloads?

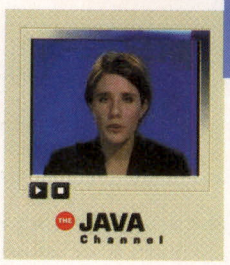
The world is full of sites devoted to producing technical news, but Silicon News is one of the biggest and most expensive launches we've seen in the UK. It's an IT news service, but its content is delivered exclusively over the Internet. The launch has been met with a degree of scepticism – we've seen this kind of service before – and just how does the company plan to bring in enough revenue to justify this kind of investment? NMTV, the company behind the site, did its homework and commissioned Research Business International to look into information overload problem faced by IT professionals. They were asked how they'd like to receive information in an ideal world. Nine out of 10 said they'd prefer to get their IT news over the Internet.



The homepage pops up quickly enough. It's only when you start switching onto the video channels (below) that it slows down







Although the Silicon News service is targeted squarely at these IT professionals, there's currently no reason why Joe Public can't dial-up and subscribe. But the reasons for making the service market-specific are threefold. First, IT decision-makers are on the Internet – routinely using ISDN or wallowing in the luxury of leased line access. Second, they're suffering from acute information overload and, of course, just as importantly, they sign off those big IT spends, which makes them a valuable target market for corporate advertisers.

The research, curiously, found that IT professionals want more information, not less. But it's the type of content that's important – they want quality, timely information, and they want the opportunity to personalise the information source. Silicon News offers all of the above, and boasts that it can deliver business news 36 hours before it appears on the FT site. "The potential total universe of subscribers runs to about two million senior IT professionals," explains editorial director, Anna Russell. "However, our focus is as much about the type of people using the service for our sponsors as it is about volume. We also have to make sure we get people coming back into the system daily".

The main news thrust comes in Breaking News, an area that's updated during the course of the day. As you scroll down the page you'll also notice links to video interviews and briefings. On your first visit to the site, you'll want to personalise your news. Up pops a Java window and a staggering array of choices. I'd warn against being over-zealous with the tick boxes. You'll be bombarded with information unless you're selective and specific. There are 40 channels of real-time news and TV programming. The problem with this Java application is that, in practice, it can be tricky to personalise your newsfeed. As you scroll down the screen, the tick boxes jump about. Say you've just asked to receive technology information specific to the Internet, but then, as you scroll down, you suddenly find the tick box you selected has become Groupware.

As well as a newsfeed, a Web robot monitors the big IT companies to pick up the latest

Site Of The Month

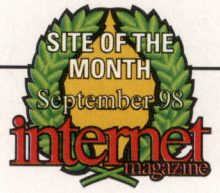
Silicon News

Designers
Bates Interactive, NMTV and Cromwell Media

Development time
Six months, launched 1 July 1998

Development costs
NMTV is a privately funded £4.5 million company

URL
www.siliconnews.com



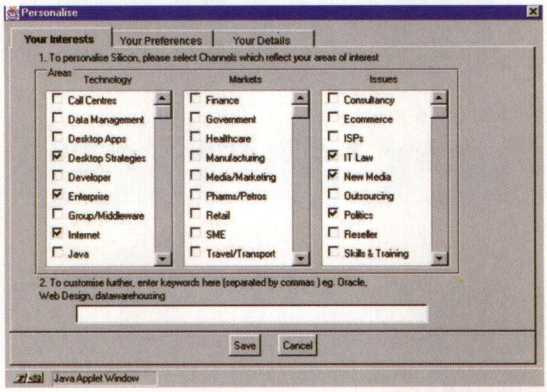
WHERE DID ALL THE MONEY GO?

So what does £4.5 million buy you these days?

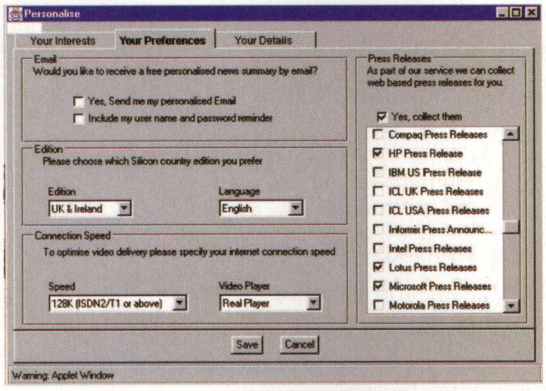
Parent company NMTV opted to run the service from two sites. The offices and the text-based news service are based in Chelsea, while the video server is based in Docklands at Telehouse.

The news journalists use an editing suite called Genesis. It was created by Cromwell Media (wwwcromwellmedia.co.uk) and is a 100 per cent Java application. Genesis lets a reporter file copy remotely and it's then downloaded to the main system for editing and publication. Anna Russell knows the system well – she was formerly editorial director at Cromwell Media. Sun Microsystems, for one, is delighted at the adoption of this Java platform – unsurprisingly it was one of the first companies to sign a sponsorship deal with Silicon News.

Behind the scenes, the text search engine comes from Excalibur. This allows you to do fancy stuff like ask it to give the names and addresses of members who are network managers who looked at a news article last week where the text of the article contained the phrase Bill Gates.

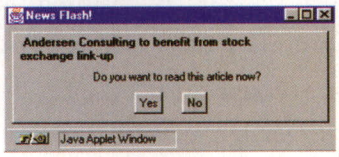


When the Java pop-up windows are good, they're very very good. When they're bad, they're horrid



press releases. This is not unlike the service offered by NEWSdesk (**www.newsdesk.com**) although this one's aimed at IT professionals rather than journalists. There's currently no tie-in with any PR database, so unfortunately you'll still also keep getting the press releases by post, fax and email.

Silicon News strays into areas normally reserved for TV production. News stories are broadcast four times a day, or when a major story



breaks. Then there's the video interviews, usually one-to-one studio chats, and video briefings, consisting of a talking head. All the footage runs in Real Player 5.0 format, so if you haven't done so already, you'll need to download it from **www.real.com**. The video on demand service is run from Telehouse with video content available over a 144Mbps ATM backbone. The quality of the video playback can be tailored to the speed of your connection so you can still see it if you're using a modem. But Rob Lewis, chief executive at Silicon News, maintains "the audience targeted would usually be accessing from a leased line, so they should have a reasonable viewing experience." Nevertheless, the quality of video playback on a leased line from the *Internet Magazine* offices was disappointing.

Who pays for what?

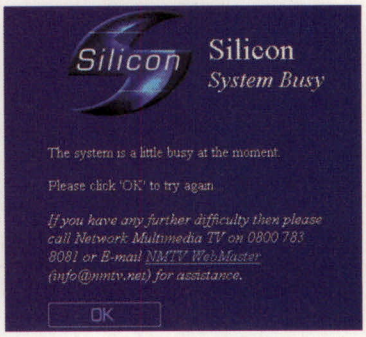
In the same way as you sell your soul to high street supermarkets for a one percent reduction in your shopping bills, at Silicon News you sell your personal details to get access to the site. Your information could be passed on to selected third parties which will use them for direct mail marketing purposes. Silicon News is also pushing Web advertisers down the route of television-style advertising. It's looking for companies to sponsor sections – so for Cadbury's chocolates and *Coronation Street* read Silicon Graphics and the news service or Hewlett Packard and the Desktop Strategies Channel.

Will it last?

"We don't think online news is the be all and end all," pondered Lewis. "We simply think it's good for particular things." The company has invested a lot of money in this site. There's a full-time editorial and production team of 30 people - that's more than you get in most paper-based IT titles. Success relies on Silicon News pulling in enough of the right kind of high-spending visitors to appeal to advertisers.

Silicon News certainly faces a testing time during the next six months while the subscriber base gets off the ground. im

"We don't think online news is the be all and end all. We simply think it's good for particular things".



Still experiencing teething problems – we saw this message far too often during our tests

What those behind other news Web sites think...

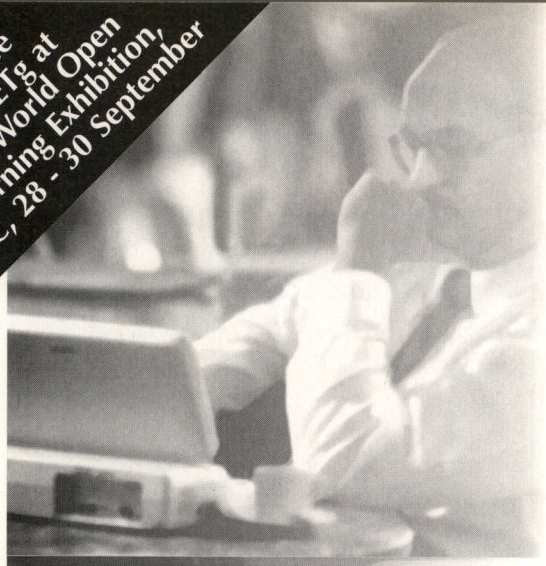
Internet Magazine asked several news Web site specialists for their comments...

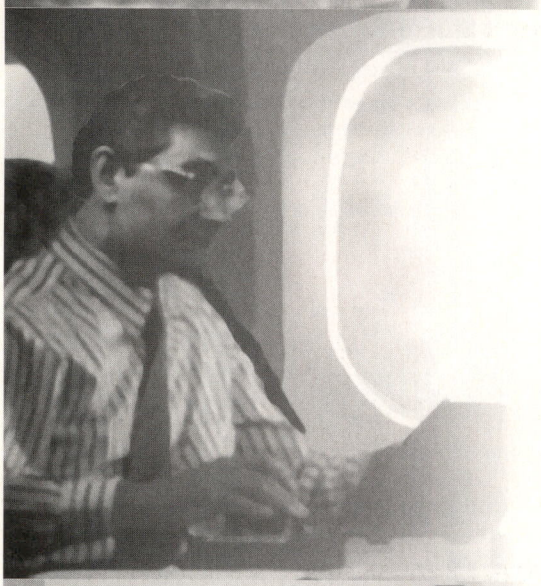
● **Nick Gilbert** business development director at NewsNow (**www.newsnow.com**) complimented the site. "Ultimately, I've no doubt that Silicon News can succeed as a newswire service," he told us, "this is not only because the quality of journalism is high, but also because they produce a high volume of news stories. In that sense, they're up there with ZD Net, VNU and ComputerWire. I'm not so sure the idea of video feeds isn't a little premature though. Will busy IT managers really take time out to sit watching their monitors, especially if the quality isn't perfect? Only time will tell, but by doing it now, Silicon is ahead of the game. If digital TV takes off, it may find itself switching over to that medium."

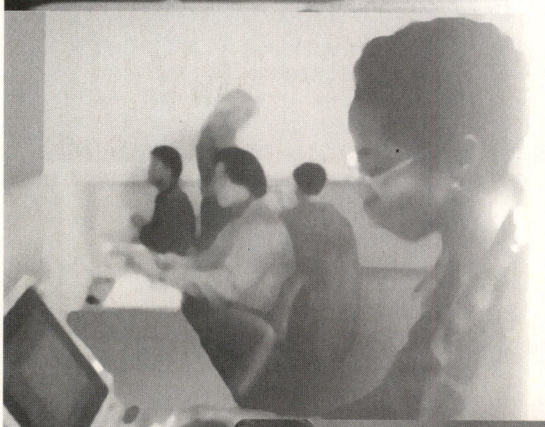
● **Azeem Ahmed** is technical manager for BBC Online. His feeling was that Silicon News was slow to use. "It's considerably slower than something like News.com (**www.news.com**) or Computerworld (**www.computerworld.com/**). I'm also not sure why I'd ever want the video. Speed is of the essence in a site like this."

● **Mike Hales**, *Internet Magazine*'s very own online editor wasn't quite so complimentary. "Unfortunately, the first impression of Silicon News isn't a good one, with the technology seeming to get in the way of the information; it's slow to load and it kept crashing my browser," he admitted. "You need RealPlayer 5.0 to view the video content, but there's no automated download available if you don't already have the software installed. That said, there's a good breadth of information on the site. The collection of press releases combined with original news reporting is a good mix, and the added extra of a unique video feed is a definite bonus. However, a major problem springs to mind. It's the technology. I assume the company behind the Web site is looking towards the integration of the Web and TV, as the Web is just too slow to make this kind of multimedia playback effective at the moment. I wish them luck, but I suspect there will be a reworking of the site within a few months."

See NETg at the World Open Learning Exhibition, NEC, 28 - 30 September







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BEHIND THE SCENES...

September's top sites

Experts tell us how this month's top sites were built. Get the lowdown on the products the Webmasters use, the inside track on site budgets and tips on how to use the latest technologies

Express Sport

Set up your own homepage for your local team and have it hosted for you by this new service

The football season may have just kicked off, but the Web's capacity for soccer sites is at full stretch. That's why *The Express*, a little late on the scene, chose a different approach

Express Sport is aimed squarely at the sports fan – any sports fan. It's unique in pitching at the grassroots level and offering a chance to create homepages for your local team. Forget HTML and an ISP to host your site, Express Sport Live will do it all for you. "We aim to be the most comprehensive site in amateur and semi-professional sport," explains Andy Stevens, assistant editor on the site.

You can create a site within a couple of minutes (no, really). The service is fast and functional but lacking in fancy features. Video clips and pictures are pencilled in for a later date. And in the finest traditions of sport, *The Express* will support your site through thick and thin. So there's no file size restrictions or limits on traffic. ISPs who impose restrictions should take note.

There's an audio feed from the ITN newsroom (**www.itn.co.uk**), and headlines are regularly updated from the Press Association (**www.pa.org**). The site launched on 9 June, and by July was hosting over 100 clubs. Express Sport Live was coy about the cost of the site, but admitted it's "the biggest Web site that United News and Media have invested in". Which means it's bigger than the Daily Star Megastar launch (**www.megastar.co.uk**). "The viewers of Megastar wanted short sharp stories, interaction and twinky toys," says Dennis Greene, former editor of Megastar and now new media manager at Express Sport Live. "This site is a whole different ball game."

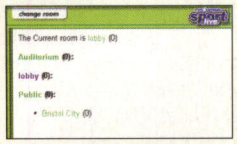
Paul Bennett

www.express-sport.com

Navigation ★★★★☆
Content ★★★★☆

GOT A SPORTING CHANCE
Sporting Life www.sporting-life.com
Sportzine UK www.sportszineuk.co.uk

HOW DO THEY DO THAT?



You can create your own chat room at the site, using a Java-enabled version of iChat. Express Sport discussed the concerns over iChat clients with back-end specialists ICL. "There were three options," explains Jon Perkin, Internet site architect at ICL, "an HTML client, a Java client and an Active X client. The Java client performs better and is more responsive than HTML, but a small number of users may experience difficulties if they're behind a firewall." This may explain why I found it rather prone to crashes. Express Sport chose not to go with Active X because of its platform-specific nature.

J&B Scotch Whisky

Get them coming back for more – and not just the Scotch

Clockworx Design has created a compelling site for J&B Rare Scotch Whisky – it's an online adventure game, The Quest For The Rare. This is one of those rare sites that's great to look at, fun to explore, entertaining and informative all at the same time.

This may come as a shock to Java fans, but Clockworx prefers to develop interactive content using Shockwave or Flash. Robin Edwards, MD of Clockworx explains: "The main problem with developing Java interactive content is development time. It's a lot easier – and faster – to use Shockwave to develop the kind of content we wanted. Java can't do what Shockwave does well. The site took seven months to develop, but it would have taken longer using Java."

"The design is set around the idea of a quest. We came up with a mix of a conventional site and a full-on adventure game. We didn't want to alienate visitors by making them take part in the quest."

"That's why we didn't go too far. We've had no negative feedback from people looking for other aspects of the site. We think we've found the right balance. The message is that J&B lets you do what you want."

The quest has you exploring the Scots isles to find hidden coins. The ultimate prize is a weekend for two at Drummuir Castle in Scotland. The quest itself is colourful, fast and intriguing, and regular updates akeep you coming back for more. A lot of attention has been given to sound effects, and Clockworx has got it just right with excellent atmospheric audio.

Clive Parker

www.jbscotch.com

Design ★★★★★
Content ★★★★☆

BLENDED OR SINGLE MALT, SIR?
Dewar's White Label www.dewars.co.uk
Glenmorangie www.glenmorangie.com
Glengoyne www.glengoynedistillery.co.uk

CLICK HERE

What do you want? Just ask

You'd be forgiven for being a little sceptical about another search engine, but this one could be a godsend to those who fear boolean logic and search strings. The Electric Monk will find sites by answering real English questions. The site takes your question and converts it to a boolean query, which is then sent to the Lycos back-end search engine. You're only given 10 ranked results, so you don't have to wade through redundant information. "The results might not at first appear to answer the question, but if you look at the text, you should find your answer," explains Bryan Sivak, the brains behind Electric Monk.

electric monk

www.electricmonk.com

Strolling.com

Take a tour of London, Paris or New York without the blisters, baggage or language barriers

The site's called Strolling, and that's what it lets you do – stroll around as a virtual tourist, checking out the hearts of London, Paris and New York. Only your mouse does the walking for you.

Sean Nolan, a Dublin-based photographer and designer, started the project a year ago. He wanted people to immerse themselves in images of any place in the world. The result is an ambitious site which will capture entire cities in a matrix of hundreds of panoramic images. The clarity of the images is striking, as is the sense of being there. As Simon O'Nuallain, technical director says, "what we feel enhances the experience is the level of movement in our images. People don't just look left and right, but also up and down."

Londoners should find the breathtaking depiction of their city compelling, but the aim is to provide a service to those hoping to visit featured locations at a later date. This makes the site an obvious advertising proposition for travel firms, but Nolan believes its scope goes beyond the holiday market – to viewing property, or historical sites, for example.

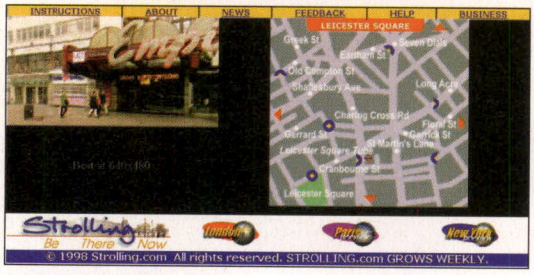
Elaine Hernen

www.strolling.com

Design ★★★★☆
Content ★★★★★

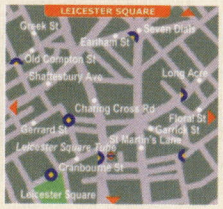
INTERNATIONAL TRAVEL FROM YOUR DESKTOP

Time & Again – Solar System www.msnbc.com/onair/msnbc/timeandagain/archive/solar/default.asp
Infinite Pictures Inc www.smoothmove.com/ipi.html
Dublin VR www.fusio.com/dublinvr/



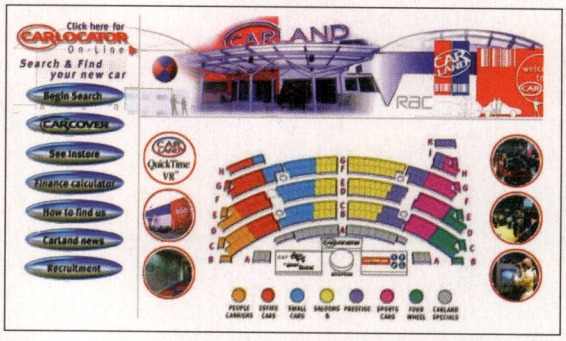
HOW DO THEY DO THAT?

The photographs were taken using a fisheye lens, to get as wide a view as possible. The images were then stitched together using Photovista from Live Picture. The problem was then finding a suitable way to deliver the panoramas to visitors to the site. After checking out the 360° viewer market (including QTVR, Smoothmove, Livepicture, and Photobubble), Sean and Simon chose the Surround Video Active X approach. The site uses a control developed by Black Diamond, which delivers a realistic panorama and smooth movement. Unfortunately, this means Navigator users need a plug-in, and Mac users need to be running IE3 or 4 on a PowerMac, to access the site. The team at Strolling.com are now working on a Java solution to make the experience fully cross-platform.



CarLand

Using touch-screen kiosk technology to build a Web site



Visitors to the CarLand showroom in Thurrock, Essex may not have realised it, but they were inadvertently being used as guinea pigs for the design of the company's Web site. The touch-screen kiosks available there to browse through and locate the 500 cars on display were proved to be content-rich, easy to navigate and time saving – all the credentials of a successful Web site.

Clive Jackson, MD of designers Global Beach, explains: "We had to maintain both the principles and speed of navigation whether the information was written in C++ and kiosk-driven or in HTML and Net-driven. We then had to translate what we had to suit both the limitations and the advantages of the Internet. On top of that we also had to design a look and feel that was consistent with a CarLand experience but without eating up bandwidth."

Site updates are synchronised with the in-store kiosks, and both sets of data are updated in real-time. Data for the kiosks comes from a back-end database which originates from a UNIX box. But the site, as Jackson explains, "pulls the data through into a more modular, manageable, flat file and is held in a format which lets you search using Perl."

CarLand has adopted a rather refreshing approach to the Web site and is clearly aware of its limitations. "We don't see the site as being instrumental in selling more cars," says James Budwell, marketing director of CarLand. "The aim is more to raise awareness of the new company and to drag people into the superstores." The used car market in the UK is worth a cool £26 billion a year, so if this site acts as a vehicle (sorry) which brings people to CarLand, it will have done its job. You can put a reserve on your chosen car from the site, to make sure nobody gazumps you before you get to Carland.

The site's got a few faults to iron out yet. The pictures are little more than thumbnails, which is not particularly helpful. A tie-in with someone like Top Gear (**www.topgear.com**) would be nice to provide additional information about the cars as well as some critical comment.

Paul Bennett

www.carland.com

Design ★★★☆☆
Content ★★★☆☆

ALSO ON THE FORECOURT

What Car? www.whatcar.co.uk
Car Source www.carsource.co.uk
Car Lounge www.carlounge.com

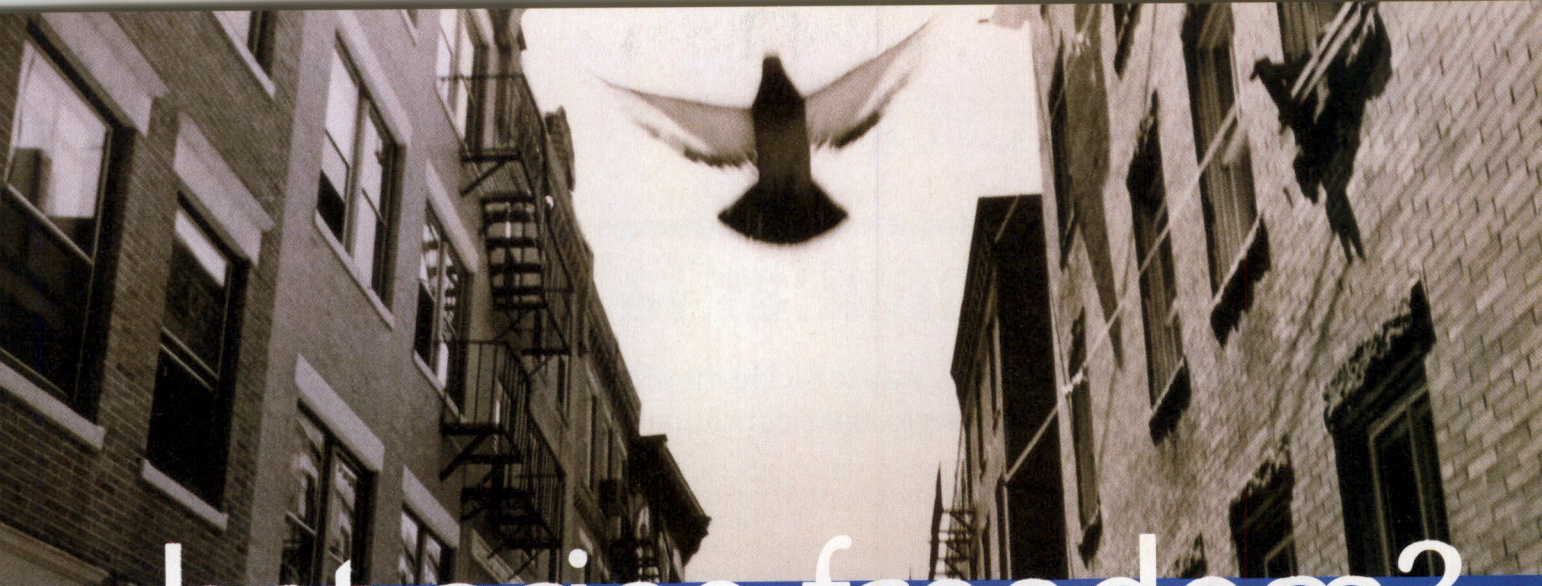
CLICK HERE

NavBar speeds up your Web browsing

Like all great ideas, NavBar is simple. When you connect to the NavBar page, a second pop-up Web window appears containing links to six major search engines, so you can search each of them without flitting from site to site. The search engines are always available beside your main browser window, and the results are displayed in the main browser page.

NavBar is an essential tool for the committed Web browser (that's you, not your software) who spends a significant period of time online searching the Web for those elusive sites.

http://start.at/navbar



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www.breathe.co.uk

THE BUILDER

He dons his hard hat, shuns his fried breakfast and goes behind the scenes to bring us the gossip from the Web design industry

Token gesture

The dog's on its last legs and the iron's been flattened. At least that's the view of Monopoly games manufacturer Hasbro which is inviting visitors to its site to choose the newest token with which to pass GO, go to jail or take a chance. It's been 40 years since the metal tokens were first issued, and Hasbro felt it was time to give the public a change of weapons. So bang up to date with three choices that are sure to knock gaming traditionalists sideways, Monopoly brings you a biplane, a piggy bank and a money sack. Radical. Dodgy building regulations too, if you ask me.
www.monopoly.com

Mine's bigger than yours

A sizeist boast went badly wrong for Microsoft. The software behemoth was attempting to prove that its new database software, SQL Server 7.0 Enterprise Edition, could handle an absolute shedload of data. A vastly detailed database of spy satellites was developed and duly wheeled out. But there were so many spy satellite spotters eager to log on that the server subsequently fell over. Luckily it wasn't badly hurt. Now all the brouhaha has died down, it's up and running again on firmer foundations.
www.terraserver.microsoft.com

Caught out 1: Web of crime

Dutch police are helping Hertfordshire constabulary with their enquiries thanks to BBC Online's *Crimewatch* site. A man wanted in connection with the use of stolen credit cards was believed to be living abroad, possibly in Holland. He may have assumed a false identity, complete with beard and moustache, but the canny Dutch police still identified him from the information online. Extradition proceedings are under way. Go get him.
www.bbc.co.uk/crimewatch

Caught out 2: Pants down

It wasn't just the female half of the couple hoping to consummate their relationship online who was taken for a ride – several

Familiar Tales

A new way to tackle the old problem of how to make education fun

FamiliarTales uses interactive 3D environments to teach children aged between three and six how to manipulate elements onscreen in a 3D virtual world. The site's variety of 3D 'virtual toys' and puzzles also encourage children to learn basic language, number, memory and sequence skills.

FamiliarTales was developed in one month by Out of the Blue Design (OBD). Its president, Linda Hahner, outlines the ideas behind the site. "Lifelike interactive 3D information provides more information in less space. It's more creative and a lot more fun. The phone on the FamiliarTales site provides small children with a 3D object which owns all of the properties of its real-world counterpart – all in under 50K. A child learns not only colour and number recognition, but also some profound lessons about interaction with computers."

The design and layout of the site have an ease and simplicity that put many other 'professionally' designed sites to shame. Bright primary colours, large images and icons make FamiliarTales an easily navigable online early learning centre for kids.

The puzzles are relatively easy, and they're fun to complete. My five year old nephew was enthralled with the site and disappointed that there weren't more puzzles to play with. But is FamiliarTales a useful education tool? It's difficult to say, but the five items on the site show that a lot of thought has gone into building the site.

Clive Parker
www.familiartales.com

Design ★★★★☆
Content ★★★★☆

ALSO IN THE CURRICULUM

Crayola Playground
www.crayola.com
Ask Dr. Math
http://forum.swarthmore.edu/dr.math/dr-math.html
Wacky Web Tales
www.eduplace.com/tales/

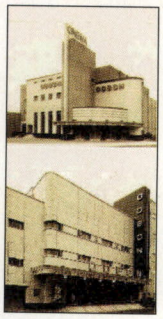
HOW DO THEY DO THAT?

Although 3D VRML technology is at the heart of the FamiliarTales site, Hahner explained the mixture of technologies used to create the site. "FamiliarTales was designed to offer hands-on interactive, 3D toys, games and puzzles for three to six year olds.

The body of the site uses HTML and JavaScript. In addition, the Familiar Tales team uses the ISO standard VRML file format to create and deliver 3D animations and environments."

The Odeon

Skip the box office queues and head straight for the hotdogs



The Odeon chain has launched Europe's first online cinema box office, offering film fans in the UK a simple way to book tickets at their own convenience. For those still wary of purchasing online, transactions through the site are encrypted using Secure Sockets Layer (SSL).

"The Web site is designed to underpin Odeon's commitment to being fanatical about film," says Richard Segal, managing director of Odeon Cinemas. "This latest innovation makes it easier than ever to choose a film, the cinema to see it at and when to go."

Since the booking facility is such an innovative service, the site's developers are cagey about its technical implementation. Still, it's not the only aspect of the site worth mentioning. There's also an extensive searchable database of current releases. And if you can't decide what to movie to see, you can always visit the Odeon Recommends section and ask for advice. Register for its personalisation service, and it will suggest a film based on your choice of favourite director, actor or actress. Your details will then be remembered on subsequent visits.

If you want to find out more about a film, there are reviews and video and audio clips for many of the movies showing at Odeon cinemas. They take a while to download, but there are some great movie clips available. Now you can check out the trailer online before making your choice.

Elaine Hernen
www.odeon.co.uk

Design ★★★☆☆
Content ★★★★☆

MORE SILVER SCREEN SURFING...

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Cinema Web www.cweb.demon.co.uk
Film Finder www.yell.co.uk/yell/ff

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website
http://www.netlink.co.uk

reseller packages also available

newspapers got caught with their pants down too. The story revolved around the claimed virginal experience of Diane and Mike, two teenagers both so much in love that they planned to lose their cherry online. Who said romance was dead? The scam was subsequently exposed as a ruse by a company known to dabble in porn. Hats off to them though, as this non-story managed to create a frenzy of publicity. Plus they've found a protective site sponsor in Condomania (www.condomania.com/).
www.ourfirsttime.com

Caught out 3: Born to it

Earlier this summer a Florida woman hope to become the first person to broadcast herself giving birth live on the Internet. Demand to view the bizarre event was so great that the host system crashed. The expectant mother identified herself only as Elizabeth. The reason for this became clear when it emerged she was wanted by US police for passing bad cheques during 1998 and 1990. The direct result of her airing on the Net wasn't the broadcasting of the arrival of her child, now named Sean, just her arrest and incarceration.

And the award goes to...

Finally, the black tie spot-a-star event that is the BAFTA Awards is to add new categories to its already drawn-out ceremony. These will be for best new media developer and best personal contribution to the interactive industry. The closing date for entries is Friday 11 September, so get nominating. I'm waiting for a Most Creative Estimate category – reckon I'm a dead cert.
www.bafta.org

The Builder trawls the online trenches for the dirt and the muck and then sees if it'll stick. If you've got a squalid story to unearth, slip me an email. Lowest quotes around, but I'm very busy since the warm weather arrived so no promises.
thebuilder@internet.emap.com

ACDO

Will a soap opera themed site kickstart a mass buying frenzy and succeed in revamping the ACDO brand? Time to come clean

Web soaps are nothing new, but soap powder manufacturer ACDO hopes its newly spruced up site will mark a new development in interactive marketing. It's a gamble, especially when it's supporting a range of cleaning, washing and specialist stain removal products.

"ACDO already had a Web site but was unhappy with it as a tool for developing business," explains Rob Yorke, multimedia manager for the site's designers Pilot Interactive. "Hence our brief was to create a site that would appeal to students, as they represent a growing percentage of the consumer base for ACDO's products."

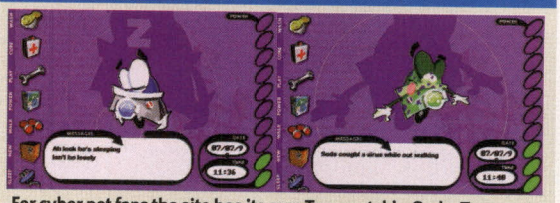
The idea they came up with was an online soap opera. The site itself takes the form of a fictitious launderette, called Laundorama, and is set in the year 2034. It's a good concept but a costly one. The total cost for building the site and updating the cartoon soap opera, Bubble Action, every two weeks for a year is £80,000.

So what has ACDO got for its money? Content areas with novelty appeal for the target audience, certainly, but the site doesn't stray far form the standard Shockwave and JavaScript fare.

"We wanted to offer an attractive site with movement, interactivity and audio," Yorke explains. "But the main problem we faced was providing this at a sufficient speed and for people without the latest browsers. That's why we chose Macromedia Shockwave and the Yamaha XG Plug-ins."

As to the future, new sections will be added and there's a new episode of the soap every fortnight. This and the cyberpet are seen as the main motivation for return visits. "We intend to add a new section every three months," says Yorke.
David Atkinson
www.acdo.co.uk

HOW DO THEY DO THAT?



For cyber pet fans the site has its own Tamogotchi – Suds. Turns out it's a ploy to get you to come back. You've got to keep browsing or the mutt gets it. "The cyberpet was created in Shockwave and cookies detect when you last visited, how much power you've got left and so on by recording a small preference file on the local hard drive. If you leave it too long before returning, Suds gets it."

Design ★★★☆☆
Content ★★★☆☆

DON'T GET INTO A LATHER

Soap directory http://goan.com/soap.html
The Spot www.thespot.com
Giant Steps www.giantsteps.co.uk

CLICK HERE

Flash from Matinee that's smoother than an adman's laptop presentation

Flash 3.0 is set to bring full screen multimedia, stereo sound and startling 3D graphics to the Web, and we'll be looking at it in some detail next month. But designer Matinee demonstrates there's still life in version 2.0 with a stunning site that looks set to make PowerPoint presentations passé. If ever you needed a download, this is it. The site also demonstrates some of Flash 3's capabilities in the gallery section.
Alex Vendittelli
www.matinee.co.uk

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- market your web site PROPERLY
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tried &te

Hot Downloads

We've trawled sites around the world to Plus the top 10 Internet radio stations

Top 10 Net radio stations

RadioTower
www.radiotower.com/
Your first move should be to check out Radio Tower, a directory of over 500 RealAudio stations categorised by genre.

The Web 93.5
www.webxfm.com
Adult, alternative album programming and the latest news on what's happening in Champaigne-Urbana, Illinois.

interFACE live Pirate Radio
http://interface.pirate-radio.co.uk/
Garage, house, techno and drum & bass from this London-based pirate station.

BBC Radio
www.bbc.co.uk
The BBC radio stations all broadcast live. No great surprises, but handy if you're abroad and want to catch up with Zoe Ball.

Capital FM
www.capitalfm.co.uk/
One of the first stations to go online, with an excellent site.

Virgin Radio
www.virginradio.co.uk/radio.html
The Ginger God is on the Net as well as on every other form of media known to man. Live broadcasts in stereo.

Purbeck FM
www.poolefm.co.uk/purbeckfm/
Poole rocks and Purbeck FM, broadcasting daily from Nine Barrow Down on the Isle of Purbeck, proves it.

King FM
http://king.org/today/
Classical tunes broadcast in RealSytem G2 format.

On-air
www.on-air.com
Four thousand songs digitised and broadcast 24 hours a day.

Rolling Stone
www.rollingstone.com/sections/radio/text/default.asp
The makers of the excellent music magazine bring you three flavours of radio station – pop, modern rock and new wave.

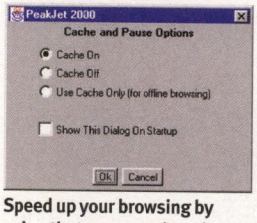
NetContact

NetContact lets hosts communicate over a network. It's a lot like WinPopUp (part of Windows 95/98), but NetContact has the benefit of being 32-bit and supporting TCP/IP. Neat features include autoreply, which lets you use your computer like an answering machine – any incoming messages are automatically replied to.

Price *Free*
Platforms *Windows 95/NT*
Download size *2.7Mb*
http://members.tripod.com/~zafaryab/netcontact.html

PeakJet 2000

A Net accelerator for the new millennium – well that's what PeakJet would have us believe. The product works by pre-loading links when



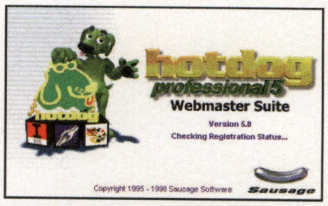
Speed up your browsing by using that spare modem time

your modem is not doing much else with its time. PeakJet is claiming up to 50 per cent faster speeds than the previous version, and works with versions 3 and higher of Navigator and Explorer. PeakJet also keeps a constantly updated list of your 20 most frequently visited sites so they're easily accessible. The free trial version runs for 30 days.

Price *$29.95 (around £18)*
Platforms *Windows 95/98/NT*
Download size *6.5Mb*
www.peak.com

GIA Bookmarks

This product takes your Web URLs and sorts them into a database. They're then categorised so you only see what's in each category at any time. The database can handle as many categories and URLs as you want to stuff into it and you can add items by just dragging and dropping them from your browser.



The HotDog Webmaster suite is home to a comprehensive set of tools

Price *Registration is $49.95 (around £30)*
Platforms *Windows 95/NT*
Download size *2.35Mb*
www.tpg.pl/

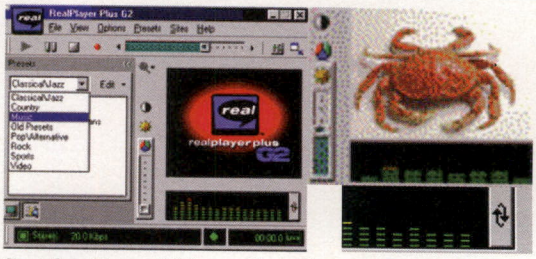
HotDog Pro 5 Webmaster suite

This is an excellent collection of tools designed to help you manage your Web site. The bundle includes the authoring tool HotDog Professional 5, Interactor which helps you add interactive features to your site, Linkbot to manage your site and the brilliant image manipulation tool, Paint Shop Pro. The program is faster than previous versions, the publishing procedure has been simplified and there's a Wizard which makes Web site building easier.

Price *Full version $199.95 (around £135)*
Platforms *Windows 95/NT/3.x*
Download size *7.9Mb*
www.sausage.com/hotdog5/

HistoryKill v4.0

If you don't want anybody to be able follow your Net tracks, try out this 21-day version of HistoryKill. It removes all trace of your



Smoother video and higher quality audio make this a must-have

RealSystem G2: a new standard in streaming

Microsoft's NetShow had better watch out – RealNetworks' latest multimedia player is now in beta and it looks good. Perhaps the best thing about G2 is that it's based on open standards – the product uses the SMIL (Synchronised Multimedia Integration Language) authoring language. Unsurprisingly, RealNetworks is claiming higher quality audio and smoother video playback. The new interface also gives you one button access to 50 or so content suppliers using G2 technology.

Price *Full product $29.99 (approx £18)*
Platforms *Windows NT/95/3.x/Mac/Unix*
Download size *2.32Mb*
www.real.com

sted

bring you the products that really are worth downloading. for your listening pleasure

Check out these examples of Web sites created with the help of Freeway

Freeway 2.0: Web design without HTML

Want a Web site, without having to learn HTML? Don't we all? Freeway takes a DTP-style approach to designing sites. The product supports cascading style sheets, HTML 4 and layers. Freeway uses what it calls Actions to create effects that would normally need a bit of scripting. You get a sample library of Actions with the preview version.

Price *Full product £129*
Platform *Mac*
Download size *3.4Mb*
www.softpress.com

footsteps from your URL history and your cache, and gets rid of cookies from your system. By golly, it even removes the Start drop-list history. HistoryKill works with versions 3 and 4 of both Navigator and Explorer.

Price *$10 (around £6) to register*
Platforms *Windows 95/98/NT*
Download size *1.5Mb*
www.swanksoft.com /historykill/

SiteEater

This pure Java application is an offline Web browser. It can pull whole Web sites onto your hard disk so they can be viewed later. You can also specify a set of file extensions that you'd like copied to your local machine.

Price *$49 (around £30)*
Platforms *Windows 95/NT*
Download size *2.5Mb*
www.sfs-software.com /siteeater/index.html

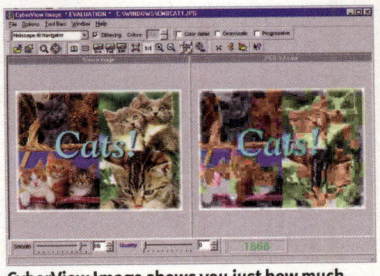
SS XML Editor

XML (eXtensible Markup Language) is the next step on from HTML. XML is smart and lets you add intelligence to your Web documents. But, as yet, there aren't many tools to build XML files with. This 21Kb download lets you display and create XML files. You can add, remove or edit XML tags just by clicking on them.

Price *Free*
Platforms *Any computer which can run the Java Virtual Machine*
Download size *21Kb*
www.cs.washington.edu /homes/stolar/ssxmledit/ssxmledit.html

CyberView Image

This handy image editor lets you preview JPEGs side by side – one JPEG is full colour and the other the smaller 8-bit version. It's an expert image file compressor and as well as being a standalone application the product can also work as a Photoshop plug-in.



CyberView Image shows you just how much quality you lose for smaller file sizes – the right hand image has been taken to minimum size

Price *$29.95 (around £18)*
Platforms *Windows 95/NT*
Download size *1.1Mb*
www.cyberviewcd.com /cvimage/index.html

ON THE CD You'll find most of these hot downloads on our cover CD

In Tried & Tested

Internet Magazine is committed to bringing you the best and most authoritative reviews in the Internet industry. Every month we test and rate the most important new Internet products. If you're making a buying decision or doing a bit of pre-purchase research, the following pages are not to be missed.

In Tried & Tested you'll find the latest news on just-announced products, hard-hitting reviews of key product releases and comprehensive Labs tests.

On our Web site at www.internet-magazine.com/reviews/welcome.html you'll find a database of all our reviews from the last year.

Key reviews for September

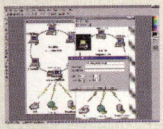
Companies the size of small cities have fought over Java, and its nifty applets are now a site essential. This month our Labs team wrestles with six tools designed to simplify Java development.
See page 80

InterLinx

As well an excellent way to connect your network to the Web, Interlinx lets you choose to manage your network or leave it to someone else.
See page 89

Good and cheap don't always go together, but Equiinet's NetPiilot network gateway is both.
See page 90

Pace Solo – a cool looking modem which also works as an answer machine and fax.
See page 91



Sort out your Web graphics with SPG WEB Tools.
HotDog Web Pro 5 is faster and bigger, but is it any better?
See page 92

Macromedia's Fireworks 1.0 is close to designer heaven.
See page 93

Apologies...
To Pace whose phone number and URL we got wrong in our July issue. Details should have read (0990) 561 001 and www.pacecom.co.uk. We'd also like to correct ZyWeb's details. The correct number is (01442) 350 350.

Star Ratings

★★★★★	Must buy
★★★★½	Should buy
★★★½	Could buy
★★½	Poor buy
★½	Don't buy

Write your own Java applets the easy way

Long hyped as the next big thing, Java is finally beginning to arrive in a big way on the Internet. But how can you write your own Java applets? Neil Redding and the Labs team look at six Java creation tools, suitable for the home user through to the old pro

Different versions of Java

As you probably know, Sun has accused Microsoft of attempting to undermine the 'write once, run anywhere' nature of its Java platform. Predictably, Microsoft has stated there's nothing to the accusation. So who's telling the truth? And who cares, or should care?

The Plain Truth

At the moment, it's certainly possible to build a Java applet using Microsoft's Visual J++ that will only run on Microsoft's virtual machine. You might do this intentionally, to take advantage of Windows-specific features, such as special user interface widgets. The currently pre-release WFC (Windows Foundation Classes) makes more of the Win32 API accessible to the Java programmer than ever before, and this is good for those writing Windows-only applications in Java.

But Microsoft has also tinkered with the Java class libraries and removed some standard methods and added others. This is clearly misleading to Java developers. What's more, Internet Explorer 4.x doesn't support the Java RMI (Remote Method Invocation) or JNI (Java Native Interface), both of which are important features of the Java platform.

Both Sun and Microsoft know Java poses a real threat to the Microsoft operating system hegemony. Microsoft is nowhere near owning all the important operating systems, and Sun has been successful so far in its attempts to make sure every important operating system has support for Java. Meanwhile, Microsoft wants everyone to use Windows.

As far as Java software development is concerned, the important thing is to be aware of the features you're using and to make sure you test your work on the platforms you care about. You'd want to do this anyway, so there's no need to shy away from Java on account of all this. We recommend using only the official Sun JDK and add-ons if you're concerned about Java's proper behaviour on non-Windows systems.

Depending on your sources, Java is everything from a revolution in computing through to just another programming language. You can rest assured, though, that Java is a big deal. Behemoth companies are suing each other over Java – it's headline news. And the use of Java development tools has doubled in the past year, according to IDC Research. But what does all of this mean to you?

A brief history of Java

In a few short years, Java has gone from obscurity to a foregone conclusion, and it's been positioned in many different ways. Despite the initial hype, it hasn't become popular as a way to animate your Web page – animated GIFs and JavaScript have proven faster and easier. And despite the efforts of its progenitor, Sun Microsystems, Java-as-platform has yet to rival Windows. Nevertheless, thanks to both Sun and the developer community, Java is now well enough entrenched to be considered the most important programming language for the near future.

Why? Ultimately, it's because Java promises the holy grail of software development – a fully-featured, robust and standard framework for building software that runs across multiple platforms. It comes closer to this holy grail than any other language, and it's made developers the world over very happy.

The fact that Java rode the coat-tails of the Internet craze to such widespread popularity is due primarily to Sun's well-executed strategy and marketing plans, including the brilliant move of getting Java runtime support into the popular Web browsers early on in the game.

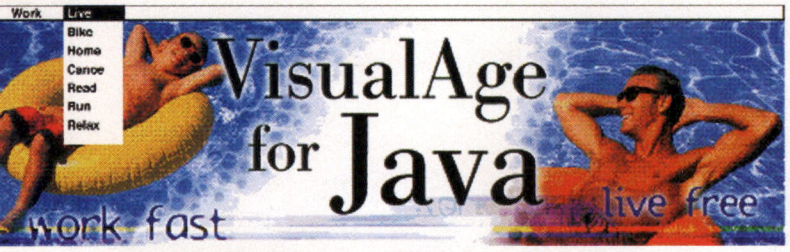
The importance of being cross-platform

Java does for application software what HTML does for documents – it provides a platform-independent standard for creating and deploying. Despite the dominance of Windows in the desktop market, a lot of Web users still use Macs, and browsing from UNIX is still popular. And, of course, there are multiple versions of the two major browsers in use on each of these platforms.

So Java's cross-platform nature is clearly important. The re-use of code between desktops and other platforms (for example, mobile

Java creation tools compared

Product name	Manufacturer	Price (ex VAT)	URL	Phone	Applet Wizard creators	Code-free interface design	JDK 1.1 support	Visual Java GUI layout tool support
Visual Café	Symantec	£249	www.symantec.co.uk	(0171) 616 5600	✔	✔	✔	✔
Jamba 2.1	Interleaf	£210	www.jamba.com	(01932) 356 800	✔	✔	n/a	✔
JBuilder Client/Server Suite	Inprise	£449	www.inprise.com/jbuilder/	(0118) 932 0022	✔	✘	✔	✔
Visual J++	Microsoft	£75.75	www.microsoft.com/visualj	(0345) 00 2000	✔	✘	✔	✘
VisualAge for Java 1.0	IBM	£74	www.software.ibm.com	(0345) 722 822	✔	✔	✔	✔
Sun JDK 1.1	Sun	free	www.javasoft.com/products/	(0171) 628 3000	✘	✘	✔	✘



Choose your Java development tool according to what you intend to do with your Java application

phones and TV set-top boxes) is a big advantage, if you happen to be working on encryption algorithms, text processing or other stuff not dependent on a particular display size or format.

Sun's primary Java slogan, 'write once, run anywhere', has always been an exaggeration. Java applets won't run on your toaster or TV yet – sometimes they don't even run in all browsers. Still, things are improving all the time, and in most cases you can coax consistent behaviour out of Java.

It all works because Java code is compiled into platform-independent bytecodes, which are translated, at runtime, into instructions for the hosting operating system/hardware platform. The translation and execution of bytecodes is handled by what's known as a virtual machine (or VM). Admittedly, the runtime translation process (also called interpretation) slows down the application, but both Microsoft and Sun are improving their Java VMs to speed up the process. Sun has promised a much faster version called HotSpot, due by year-end, which it says will put an end to the performance advantage of C++ in most applications. If it even comes close, there will be much rejoicing.

To Java or not to Java?

Building sophisticated applications that run inside a Web browser and launch with a single-click from a Web page, is a job that only Java can do properly at the moment. HTML, forms and JavaScript can handle many common tasks. And Macromedia's Flash is a great choice for fancier interactive multimedia. But anything more complicated and program-like is best done in Java.

And programming in Java is not a simple task, even for the most seasoned of programmers. C++ experts tend to have the least difficulty adjusting to Java development, as the syntax of the languages is similar. It's quite a leap from HTML and only slightly less of a jump from JavaScript. While there are tools that help you put together Java-based interfaces, several of which we've tested on the following three pages, you'll probably want to make modifications or enhancements which will entail having to read and write your own Java code.

If you're still reading, more power to you. Java is a lot of fun to work with, the most thoroughly enabled and exciting general purpose programming language ever created, and absolutely rewarding.

Java resources

There are heaps of excellent Java-related sites on the Web, here's our pick of the best...

- JavaWorld magazine's site is probably the best place to start for the Java programmer, and it's full of excellent tutorials and how-to articles, links to developer resources and the latest Java news. Visit regularly.
  www.javaworld.com
- All the latest news straight from the horse's, er, Sun's mouth, so it's got to be true.
  www.javasoft.com
- Linked from the JavaSoft home page but worth a separate mention here, as it points you to some of the best examples of industrial-strength Java apps out there. Check out the demo of Clearview's Internet Retirement Assessor and have a look at the screenshots of Bridge Information Systems' BridgeChannel if you're at all in doubt about Java's business applications.
  www.javasoft.com/ javareel
- The #1 Java Review Service tests all sorts of Java applets, utilities, and products. Another must-see.
  www.jars.com
- The once-mighty Gamelan has been merged into developer.com, but still links to the best of Java on the Web. Everything from a musical notation tutorial to frameworks for building e-commerce into your site and a remake of PacMan. Numerous excellent examples of Java at work.
  www.developer.com/directories/pages/dir.java.html

A JOLT OF EFFICIENCY

Which tool is best for you

We've attempted to give you a good idea of how Java works and why it's important, but how do you choose which product is going to help you develop Java applications?

As is often the case, what's best depends on what you intend to do with the tool. If your bottom line is making a killer Windows application and you don't need to run on other platforms, then Microsoft's Visual J++ is probably the way to go. It continues to win awards for the speed of its virtual machine and compilation, and if you're already using other Visual Studio tools you'll feel instantly at home. However, most of you probably do care about other platforms, most likely because you want your Java application to work over the Web. And there's lots to like about the other tools on test, including top-notch visual layout facilities for building your interface, integrated support for building server-side and database-client Java apps, and competitive performance.

JavaBeans, Java's excellent reusable-component standard, will become increasingly useful and important. This allows programmers to reuse chunks of code (called beans) in different applets, cutting down on the time it takes to write applets. Lots of industrial-strength beans are already available. Visual Age, Visual Café and JBuilder all have decent support for importing and creating JavaBeans, while Visual J++ doesn't.

ActiveX support	Consumes/ creates JavaBeans	Database connectivity support	Integrated debugger	In-browser debugging	Version control support	Creates JAR/ZIP files?	Uploads projects to the Web	Rating
✔	✔	✔	✔	✔	✘	✔	✔	★★★★☆
✘	✔	Barely	✘	✘	✘	✔	✔	★★★☆☆
✘	✔	✔	✔	✘	✔	✔	✘	★★★★☆
✘	✔	✔	✔	✔	✘	✔	✘	★★★☆☆
✘	✔	✔	✔	✘	✔	✔	✘	★★★☆☆
✘	n/a	✘	✘	✘	✘	✘	✘	★★★☆☆

DSVR

The Next Step

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Multiple POP3 accounts
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Unlimited Autoresponders
256kbit Burstable throughput on every server
Unlimited data transfer
24 hour backup
PHP3 support
MSQL - MySQL support
FrontPage Extensions
MajorDomo
Logging statistics
ApacheSSL
RealAudio
Pre-installed CGI scripts
Marketing resources
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0161 610 1881
info@dsvr.co.uk
www.dsvr.co.uk

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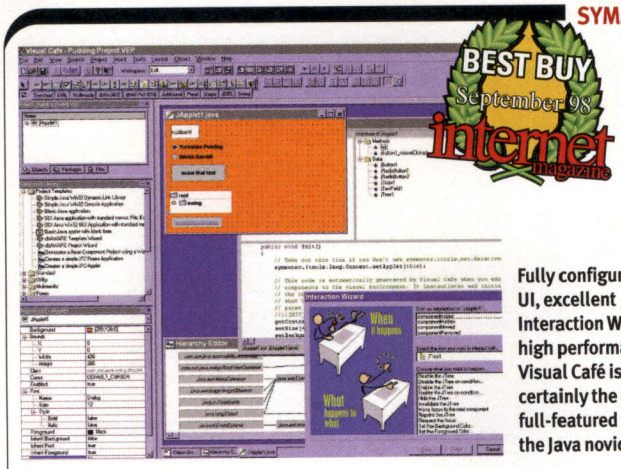
SYMANTEC



Fully configurable UI, excellent Interaction Wizardry, high performance. Visual Café is certainly the best full-featured tool for the Java novice

Visual Café

Confusing at first, but worth perservering with for novice Java programmers

Symantec was the first company to market a Java development environment for Windows, bringing more than a decade of tool development experience to bear. So you know Symantec's committed to Java. Visual Café 2.5 continues the evolution of what was already the best compromise between power and usability in terms of visual programming facilities.

Version 2.5's interface enhancements extend customizability while increasing initial confusion, although it's nothing a few minutes with the environment won't cure.

Visual Café is the only full-featured Java development tool that lets you build significant applets without writing a line of code. For this reason alone, it deserves a serious look, especially if you're just starting out but expect to stick with Java for a while. All the latest GUI enhancements to Java are supported, including JFC 1.1/Swing.

Once you've built your new project, from one of the many useful templates, you'll have a basic code-framework for your applet, and you'll want to rip right into the Interaction Wizard. Select it, drag it from one component to another, and you're confronted with an action-selection dialog box where the actions are (mostly) described in plain English. Joy! Change the text or colour of a label with the press of a button. And that's all with no coding at all.

What's the downside? Well, if you've used WYSIWYG HTML editors, you can probably guess – it's tricky to go back and edit the code that Visual Café has automatically built for you. Once you've mastered Java, you'll probably be glad you can turn the Rapid Application Development features off, suppressing Visual Café's desire to write code for you.

Naturally, there's full support for JavaBeans, although you'll have to do a fair bit of hand-coding to create them. The Hierarchy Editor is unique, and makes quick work of subclassing and rearranging your class hierarchy. Incremental, remote and in-browser debugging are all supported by an informative and capable debugger.

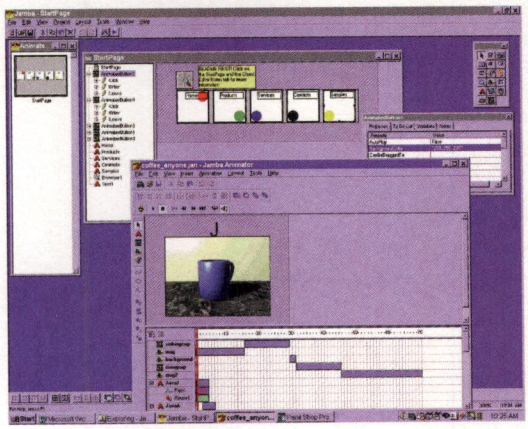
The Database Development Edition of Visual Café adds data-aware JavaBeans and wizards for building data-aware applications, as well as the full dbANYWHERE server, Netscape's FastTrack Web server, Sybase SQL Anywhere and full ODBC/JDBC support. Nothing for CORBA, though.

Visual Café is certainly the most accessible full-featured environment we've seen, and it's probably the best place to start your Java adventures.

★★★★★

Visual Café 2.5
Price *Professional Edition: £249, Database Development Edition: £689*
Pros *Excellent Interaction Wizard, configurable interface, easy to learn*
Cons *Could have better JavaBeans support, no CORBA support*
Contact *Symantec UK*
Phone *(0171) 616 5600*
www.symantec.co.uk

INTERLEAF



Applets are easily assembled, activated with events and animation using Jamba's straightforward layout tools and Animator

Jamba 2.1

A good, no-nonsense, general-purpose Java development environment

Over your afternoon tea, Jamba can take you from nothing to some pretty fancy animated Web stuff. It's easy to learn and only reminds you of its Java dependency when you're ready to deploy your work. Whether you warm to Jamba or not will probably depend on your interest in animating your Web site.

Not that banner-style animation is the only thing Jamba does. It's got wizards that let you quickly build email-generating forms, combo boxes for selecting audio clips for playback, image strips and hyperlinking buttons.

To make anything halfway interesting and smart, though, you'll want to do it yourself – without the wizards. Fortunately, it couldn't be easier – just drag whatever you want from the object palette to your workspace. Buttons, checkboxes, text fields, images, audio playback controls are all there. Having these widgets generate events and send them back and forth is equally easy – it's just a matter of selecting the causative action, selecting the object and ticking the desired effect. So, for example, you can make an image change from a Yorkshire pudding to a Welsh rarebit when the mouse pointer enters a predefined area (known as a HotSpot). Or set up a button so that double-clicking it changes the page's background colour to red, but only if it's already yellow. Conditional actions like this are also straightforward to set up.

Jamba objects are not JavaBeans, so the set of supported properties and events can't be changed, but the ones that are there let you do almost anything you see on the Web today.

Jamba Animator is where the fun lies – timeline and path-based animations complete with zooms, fades, dissolves and wipes. You'll need to prepare your images well, but support for multiple image paths and layers makes complex tasks easy. And Jamba events can be inserted at any point during the animation. The bundled ImageLab is a capable editor, supporting more than 30 graphics formats, as well as the expected sizing, cropping and conversion facilities.

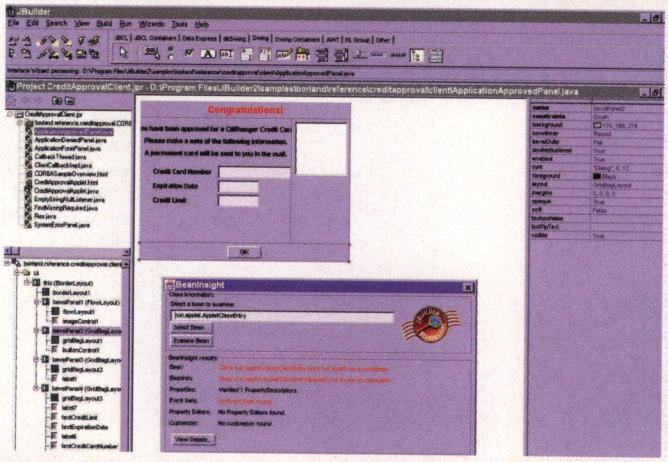
When you're ready to deploy, Jamba guides you through the process. You can publish your applet as a CAB (Microsoft Cabinet) or ZIP archive as well as the usual set of class files.

So, should you use Jamba? If you're happy with your existing development environment, it's probably not worth swapping to. And if you expect to be doing more complicated Java stuff, you'd should invest in a more open-ended solution. But for those looking to add basic interactive animation to their Web sites, Jamba's worth a look.

★★★★★

Jamba 2.1
Price *£210*
Pros *Quick, code-free animations, easy Web deployment*
Cons *Fairly limited, general-purpose tool*
Contact *Interleaf UK*
Phone *(01932) 356 800*
www.jamba.com

INPRISE



Good JavaBeans support and the down-to-business interface and feature set make JBuilder the best choice for building enterprise applications

JBuilder 2.0

A Java tool for the seasoned developer, novices should steer well clear

Since the dawn of time, Borland (now known as Inprise) has been making solid, reliable tools for programmers. So you'd expect JBuilder 2.0 to deliver the goods in grand, robust style and you won't be disappointed.

Experienced developers will be immediately at home with the interface. It's clean and intuitive, and you get the sense that JBuilder means business. If you're looking to ease your way into Java development, however, JBuilder isn't the place to start. We say this because JBuilder lacks a code-free way to wire your application's components together. While the tool comes with the latest UI libraries (including Sun's JFC 1.1/ Swing and its own JBCL, a set of data-aware UI classes), you have to know, for example, whether you want to use an AWT Button, a Swing JButton or the JBCL equivalent before dragging it into your workspace. And setting up interactions between components demands some good, old-fashioned coding work.

This lack of RAD support is JBuilder's main fault. But once you're comfortable with Java in general, you'll find JBuilder accelerates almost every aspect of development. The Property Inspector tidily displays everything about a component, and double-clicking on an event generates code to handle it. The AppBrowser provides the usual file and class trees for navigating your source code, while showing you only those files or classes you want.

Debugging is almost a pleasure, with all the thread and stack information, data inspection and expression evaluation features the seasoned developer could ask for. And speaking of debugging, current Java developers will certainly applaud the ease with which JBuilder can compile and test against various JDK versions.

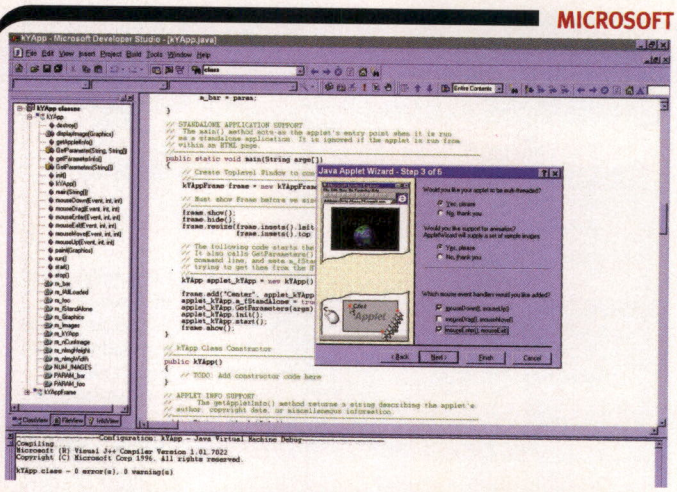
Over 100 JavaBeans are thrown into the deal. JBuilder's BeanExpress wizards could be easier to use, but they're OK for most purposes. I have to mention the Resource String Wizard, which instantly handles the internationalization of the text in your components.

Ultimately, JBuilder is one impressive, comprehensive tool. If you're willing to bite the bullet and do a little reading up on Java, we expect you'll find that JBuilder can provide all the features you need.

★★★★★

JBuilder 2.0
Price *Client/Server Suite: £1,699; Professional: £449; Standard: £84.26*
Pros *Robust, complete environment, scales to the largest projects*
Cons *A bit difficult starting out, weak visual design tools*
Contact *Inprise UK*
Phone *(0118) 932 0022*
www.inprise.com/builder/

MICROSOFT



Visual J++ is straightforward, robust and dull. You'll have to wait for the upcoming version 6.0 to get all the exciting stuff

Visual J++

A great solution if you want to develop for Windows environments only

By now, you expect Microsoft to herd us all in the direction of Windows at every possible point. Its Java products are no exception. Still, most of us find the Microsoft fold a pleasant enough place to be, and when you're being well fed, why bugger off?

Which raises the question: Who cares about maximum cross-platform support? If you plan to have Windows 95/NT at both client and server side wherever your Java software is running, Visual J++ may well be a good way to go. And even if you haven't, you'll find Microsoft's offering is good and about to get quite a bit better.

For starters, the Microsoft VM is the fastest, most compatible VM around (it also makes Internet Explorer's Java execution second to none). And if you're already used to the Visual Studio environment you'll feel right at home. Visual J++ also has a super-fast compiler and extensive, robust support for debugging, the importance of which can hardly be overestimated.

On the other hand, Visual J++ 1.1's support for visual development is, ironically, lacking. Although wizards guide you through the applet-creation process, creating all the code for a bare-bones applet, this is disappointing compared to what the other tools on test can do. There's no support for form-style layout of visual components, although you can build resources in the usual Visual Studio fashion and then convert them to Java code.

Anyway, back to the good stuff. Integration with Windows technologies, such as ActiveX and COM, is tight. In truth, it's easier to interact with ActiveX controls from Java than from C++, because of the simpler syntax. If you've already got lots of ActiveX-enabled code and want to program in Java, Visual J++ has got to be the best way to go.

We also had a look at the latest preview version of Visual J++ 6.0 (to be released later this year), which includes many improvements. The new Windows Foundation Classes (WFC, a derivative of AFC) offer unprecedented access to the Win32 APIs, making it significantly easier to develop fully-fledged Windows apps in Java. WFC also contains extensive support for dynamic HTML, Active Server Pages, and easy database access.

Version 1.1 is lacking, but you can bet Visual J++ 6.0 will be the best tool around for Windows development.

★★★★★

Visual J++ 1.1 Professional
Price *£74.75*
Pros *Fast, robust, ActiveX/Win32 support. It's from Microsoft*
Cons *Lousy visual layout support, no JavaBeans support. It's from Microsoft*
Contact *Microsoft Connection*
Phone *(0345) 002 000*
www.microsoft.com/visualj

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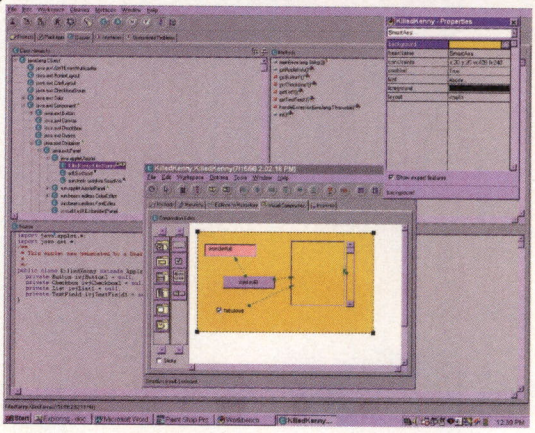
IBM



See those connecting arrows? They're powerful, they are. And the rest of Visual Age is full of features and promising as well

Visual Age for Java

IBM's impressive newcomer to the Java tool world, proves suprisingly powerful

IBM's Visual Age for Java is an impressive offering, replete with nearly every treat the veteran object-oriented developer could want. There are, however, reasons to think twice before buying this Java tool newcomer.

You're led by a SmartGuide (a wizard by another name) into creating a new applet. You only need to put in the name of the applet, its package and containing project, and you're ushered into one of the most sophisticated visual layout environments we've ever seen. Not that it looks intimidating at first, but the power and flexibility this tool's Visual Composition Editor (VCE) provides is excellent.

The VCE works with components, which are all JavaBeans. Arranging these components is as simple as dragging and dropping. The complexity arises when you set up connections between components, which is also where the real power lies. Dragging lines to set up relationships is no big deal, but figuring out which property or event of the source component to connect to what property or event of the destination components takes some time.

Since each connection you establish creates lots of lines of code, mastery of the VCE could save many hours of programming work.

What else? Visual Age's Repository automatically keeps track of changes to your project. It's easy to replace or compare a current version with a previous version of any class or project element, but since they're not saved as separate files you'll have to export from the Repository to see distinct revisions.

Hierarchical or list-style browsing by project, package or class is quick and painless. There's an Unresolved Problems tab, which maintains a list of things needing attention. This, along with Visual Age's Repository and easy JavaBean import/export, takes much of the stress out of project development.

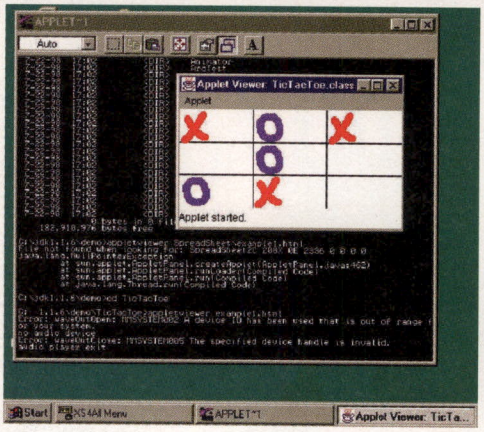
The Enterprise version gives you top-notch support for building distributed applications and its SmartGuides make quick work of creating connections with any JDBC database.

We've heard that Visual Age has difficulty with large projects, and there are some compiler stability issues, but these are unsurprising for a 1.0 release. A product worth shortlisting, especially once the version 1 bugs are ironed out.

★★★☆☆

Visual Age for Java Professional, v1.0
Price *£74 (Enterprise version: £1,453)*
Pros *Excellent visual designer, great JavaBeans support*
Cons *Confusing interface, difficult to learn, a bit unstable*
Contact *IBM UK*
Phone *(0345) 722 822*
www.software.ibm.com

SUN



It may not look like much, but Sun's JDK underpins all things Java, and you gotta love it

Sun's Java Development Kit

It's free and it's the key Java reference tool, but it's not for development

Sun's Java Development Kit, or JDK, is where it all began. Thankfully, Java has moved on from here, and the JDK isn't much of a development tool by today's standards. Then again, it wasn't really meant to be. The JDK is a freely-distributable reference platform for the Java specification. It contains everything you need to develop and run Java applets and applications (the distinction is that the former runs inside a browser, the latter on its own, although they're often used interchangably).

The most important part of the JDK is the class libraries. Java code is stored in classes. When a Java program runs, class files are loaded and executed, either by a bytecode interpreter (virtual machine) or by a JIT (Just-In-Time compiler). In the majority of Java programs, most of the code executed comes from the JDK, since its class libraries contain support for GUI elements, threads, networking, communication with a hosting browser and lots of other stuff. The JDK comes with source code for all the public classes in the Java platform, which is helpful when you're learning Java.

As well as the essential Java interpreter, the latest version of the JDK (1.1.6) includes a production-quality JIT from Symantec, which claims to increase performance by a factor of 10 over that of the interpreter. The JIT is used by default when you're running applets inside the bundled AppletViewer.

What about actual development tools? Those included here are really only for the hardcore programmer – there's no GUI, just a DOS prompt waiting for a command line full of javac -this and jdb -that. You're welcome to give it a go, but unless you're starving, we'd recommend you go for a GUI-enabled tool. However, we should mention the super-cool javadoc, which generates HTML-based documentation from Java sources – this is where Sun's documentation comes from.

The 1.1 Java platform introduced lots of new features including internationalization, signed applets, the JAR (archive) file format, the JavaBeans component model, RMI for distributed applications, JDBC (database connectivity) to name but a few. Sitting here beholding it all, we can't help but be impressed at Sun's Java achievements. And there's more coming this autumn in JDK 1.2! Hold on to your seats...

★★★☆☆

Sun JDK 1.1.6
Price *Free*
Pros *Cheap(!), provides the reference point for Java (unless you're Microsoft)*
Cons *No graphical user interface, no printed manuals*
Contact *Sun Microsystems*
Phone *(0171) 628 3000*
www.javasoft.com/products/jdk/1.1

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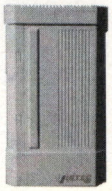

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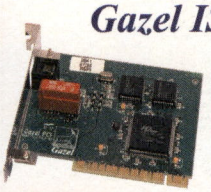

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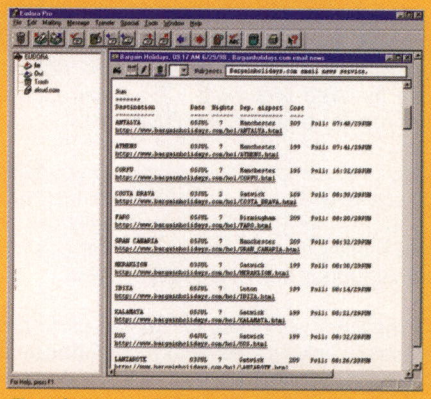

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InterLinx

An easy to use Internet gateway with all the functions you could need

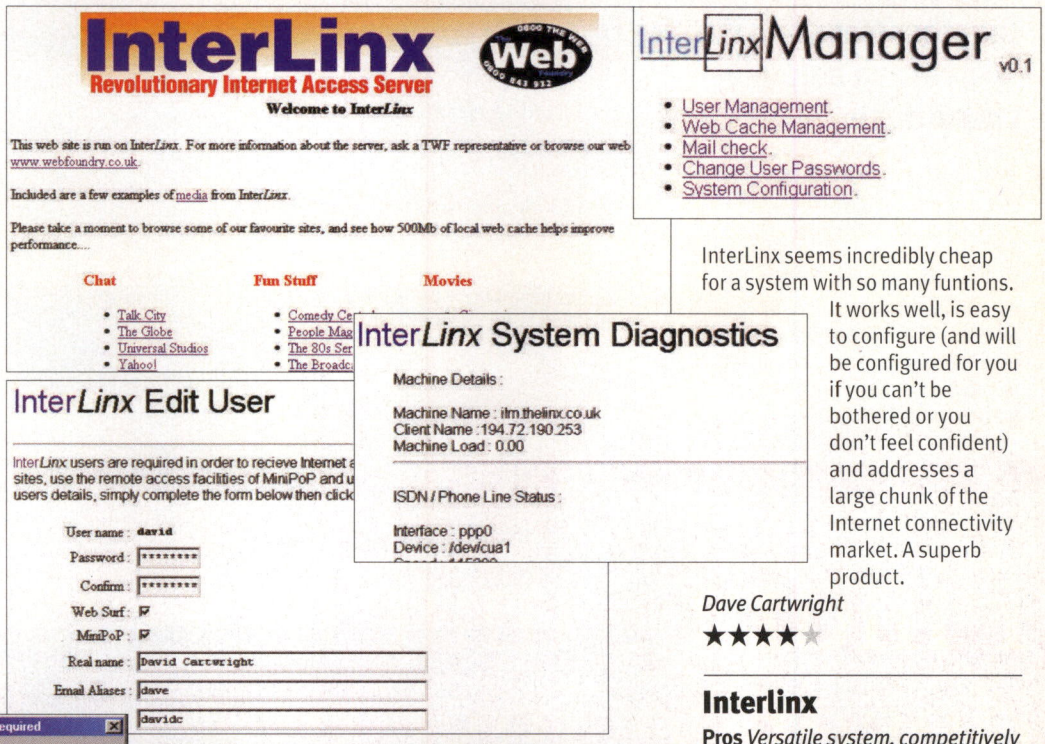
InterLinx is an all-in-one Internet connection system. While not particularly technologically innovative (there are plenty of other systems which can perform the same actions as InterLinx), it's a complete, well-implemented service suited to a wide variety of applications.

The system is a Pentium-based PC running a Linux kernel. Though some people are sceptical when it comes to Linux, our experience is that it rarely crashes, and performs well in all aspects of PC connectivity. The system arrives preconfigured and you run it without a monitor or keyboard.

Management is via the now-obligatory Web interface, which is not the most attractive in the world but, frankly, this isn't important. What matters is that all the various parameters (user lists, configuration parameters, log files, and so on) are easily accessible via a password-protected set of screens. And Interlinx maintains a second IP address, completely separate from the main one, on which the IP services run for the management pages.

All this assumes you want to manage the unit yourself. Part of the purchase price covers a complete service management facility, which means the nice people at The Web Foundry will configure your box for you from afar. This is appealing to those who are not particularly comfortable with how IP, or some of the more esoteric aspects of working with the Internet, work.

The features of the unit are extremely varied (there are several products all based on the same software, but with different features turned on and off). First is Windows for Workgroups file and print services – if you wish, InterLinx can be a LAN file server. Then comes Network Address Translation (the mechanism used by a firewall to hide an entire network behind a single IP address), Web serving (if you're a FrontPage user, the server interfaces seamlessly), Internet caching/proxying/blocking, DHCP (for allocating IP information to network clients), SMTP/POP email, and IP routing.



With Interlinx you can manage your network, setting up passwords and Internet blocking software for each person. Or you can get the people from Web Foundary to do it for you

Muliple Net access

Connectivity to the Internet is supported via an impressive range of different interfaces. The basic unit supports dial-up connections, via modem or ISDN, though higher-end models provide fixed-link connectivity using leased lines, Frame Relay or ATM. Or you can just have a pair of Ethernet cards if you don't need internal WAN connectivity (as might be the case if you were adding InterLinx to an existing network as a firewall).

The Internet blocking facility can be set up for each person on the network. The device has an internal table, which is used to define not just who can access the Internet, but also things like mail aliases, as well as being useful for creating and using a basic mailing list. Access can be restricted for users who you don't want to let on the Internet, while logging the access of people who are allowed to connect. For these select few, a pattern-matching URL blocker is also provided.

Remote access

In addition to providing access from a LAN to the Internet, the unit can also act as a dial-up server via a feature called MiniPOP. This is handy if you want to manage the unit remotely, as well as providing you with Internet connectivity from home via the office LAN.

InterLinx is a splendidly implemented system, laden with useful features and constantly updated (IMAP mail support is on the way, for example). It's a super choice for an underlying operating system, and everything ties together nicely.

The system is particularly attractive to smallish businesses and schools (there is a special educational package, priced very attractively), though with support for 'proper' wide area technology such as Frame Relay and ATM, it would fit nicely into many larger organisations too.

InterLinx seems incredibly cheap for a system with so many funtions. It works well, is easy to configure (and will be configured for you if you can't be bothered or you don't feel confident) and addresses a large chunk of the Internet connectivity market. A superb product.

Dave Cartwright

★★★★☆

Interlinx

Pros *Versatile system, competitively priced (particularly the education package) and no need for any in-house expertise*

Cons *Because it is a single box, you have all your connectivity eggs in one metal basket*

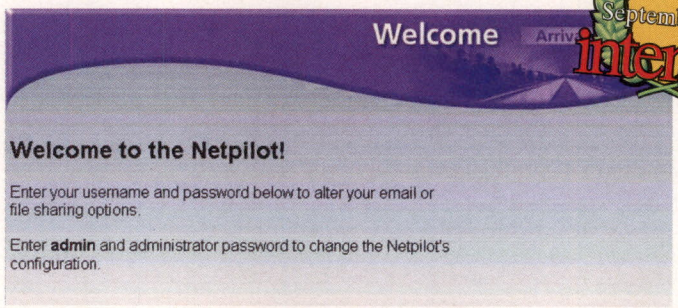
Prices *(all for one year)*
InterLinx: £5,000
InterLinx Plus Workgroup Server (InterLinx plus WfWG file/print services &tape backup): £5,500
InterLinx Pro Internet Server (for leased line and high-end connections): £6,000
IntraLinx Departmental Intranet Server (InterLinx plus dual Ethernet cardsand MiniPOP): £4,500

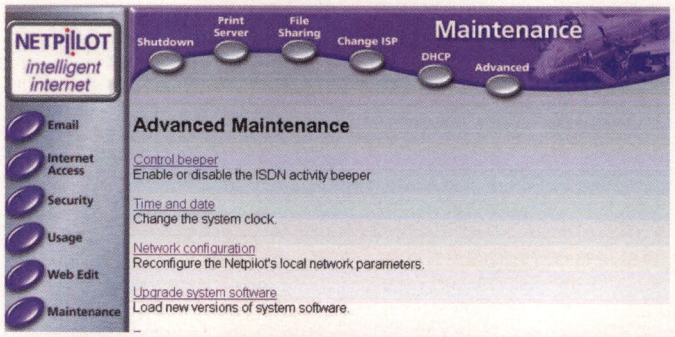
Contact *The Web Foundry*
Phone *(01902) 896511*
www.webfoundry.co.uk

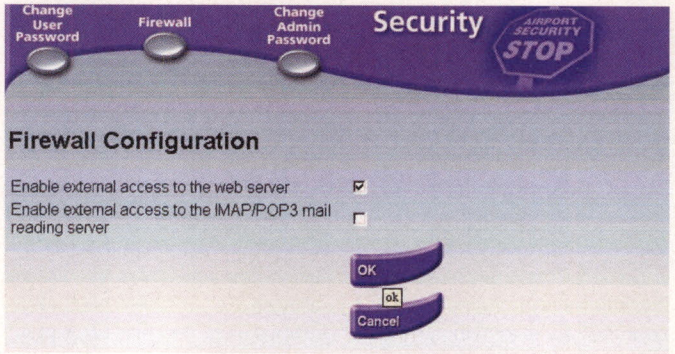
Others to consider
The NetStar managed Internet service is an obvious contender, though many Internet services come with a certain amount of management built in, especially the router between the LAN and the Internet link and services such as domain naming and mail forwarding. NetPiilot (reviewed on the following page) also does a broadly similar job, although it's sold as a standalone unit without the management options included with Interlinx.

Equiinet NetPiilot

A simple, well put together Net access system at a stupidly cheap price







Top: To change NetPiilot's configuration you use NetPiilot's Web-based interface
Middle: Network parameters are easily reconfigured
Bottom: NetPiilot's comprehensive firewall features include advert blocking

The InterLinx product (see previous page) is surprisingly cheap for what it provides, but pales into insignificance when compared with Equiinet's new NetPiilot. The latter is another all-in-one Internet/intranet device. And although it's not a managed service, it provides incredible value at a price we find hard to comprehend.

While the Interlinx isobviously a PC running Linux, the NetPiilot looks more of a dedicated, custom-built box – despite really being a Linux machine too (though the next release will be based on a different, cheaper processor). The unit itself is not much bigger than the average modem, and houses a monitor port, two I/O ports, a parallel printer outlet, an async port for a modem connection and a pair of RJ-45 jacks – one for the ISDN connection and one for the 10Mbps Ethernet link. At the moment, NetPiilot supports only modem and ISDN connectivity, but a module is planned for the near future which will provide leased-line connectivity as well, bringing it into the 2Mbps WAN league.

Cut telephone bills

The features you get with NetPiilot are just what you'd expect from a single-box Internet/intranet product. Automatic dial-on-demand lets the system drop the dial-up connection in order to minimise your telephone bills (you can configure specific connect times into the box if you want).

The unit can also act as a POP/SMTP mail hub (including auto-redirection and aliasing), while the built-in Web server means NetPiilot can be used as either a traditional Web or an intranet server. Reporting is also extensive, and, in addition to on-ine reporting, the unit can send daily mails to the device's administrator summarising its performance and events for the day.

Like InterLinx, the unit can also act as a Windows file and print server, and a DHCP address server. Another similar feature is the ability to implement time-based restrictions on activity between the LAN and the Internet.

The firewall features of the unit are comprehensive, including Network Address Translation site filtering ('blacklisting'), 'masquerading', and packet filtering ('deny-by-service' and 'deny-by-address'). It also includes advertisement blocking, so unwanted banners don't get through to you.

Configuration is via a Web-based interface. When the unit is first installed, just a handful of steps takes you from a virgin box to a fully working unit. Reconfiguration is just as easy. There are specific options in the configuration system for things such as changing service provider, which makes it simple to reconfigure the network parameters of the system. The management of user IDs and other parameters are similarly straightforward.

Free upgrades

Upgrades to the system are free (in addition to operating software, items such as the Web site blacklist are also updated online). This is remarkable considering the low cost of the unit, and you have to wonder whether the manufacturer can justify selling the product as just a one-off cost without a constant stream of incrome from upgrade charges to maintain development of future code.

From the consumer's point of view, NetPiilot's price is excellent and the fact that the directors of Equiinet (a group including the ubiquitous Bob Jones) are well known for their abilities in the networking field gives some reassurance that the company will be around for some time to support its users.

NetPiilot provides all of the services you could want in an Internet/intranet server, yet costs less than £2,000 – and don't forget the free downloads. It's a doddle to set up, just as easy to manage, and sits unobtrusively on the bench serving pages and emails fast enough for most small to medium-sized businesses. You have to wonder how the company can sell it so cheaply, but let's not knock them for doing it.

Dave Cartwright

★★★★★

So, which one should you buy?

● The **InterLinx** system costs more, but is a managed service rather than just a box that's delivered, and so will appeal to many organisations without the time or the inclination to configure and maintain an Internet service themselves (especially for people who perhaps don't understand how to fix the weird ISDN or modem problems sometimes experienced). For this reason, InterLinx should definitely not be discounted as an option.

● **NetPiilot** gives pretty much the same functions, right down to the Windows file sharing support, but is aimed at someone who wants to look after their own Internet/intranet world. Both are excellent products, though we suspect that all but the most time-strapped, least technical person would choose Equiinet's product.

Equiinet NetPiilot

Price *£1,995*
Pros *Incredibly cheap. Manageable via simple Web interface*
Cons *Few we can think of*
Supplier *Equiinet*
Phone *(0870) 6081530*
Enquiries@equiinet.com

Pace Solo

A stylish new modem that also acts as a fax and answering machine

The people at Pace don't describe their latest product as a modem – they describe it as a 'PC messaging system'. However you look at it, it's a modem with a lot of bolt-on features.

The most useful of these is its ability to act as a standalone answering machine and fax – the Solo can receive and store both voice messages and faxes without having the PC on. Inside the Solo is 2Mb of memory – enough for around 30 minutes of speech or 30 pages of faxes (depending on the resolution used) – but Pace sell memory modules so you can expand this to 4Mb or 6Mb.

The natty little number breaks the straightjacket of modem style

The design is certainly pretty good – it looks more like an answering machine than a modem – and has enough lights and flashing buttons to satisfy most technophiles. Three big buttons on the front control the speakerphone, fax and answering machine, and light up when the component is active. The fax and answering machine buttons also flash when a message has been received. And there are more lights, this time around the speaker, show the Solo's status (such as when the phone is off the hook or when data is being sent or received).

It's also one of the few modems which support UK Caller ID, where the modem stores the number of the person calling, as well as a nice feature called Follow Me. With this, the modem will ring you at whatever number you specify when it takes a message and offer you the chance to retrieve it.

While the Solo can be used as a standalone answering machine, it also comes with software which lets you control it from the PC, including playing back and saving messages and printing faxes. The software involved can be rather confusing, but there are some nice features included, such as being able to print a fax by pressing the fax button on the Solo when it's connected to the PC.

The software also includes drivers that allow the fax features to be used as a printer, so you can fax documents straight from a word processing program by selecting the Solo fax driver as the printer to use. Again, this has some nice touches, such as a display of the state of your fax as it is sent.

At present, the modem only supports the V.34 standard (33.6 kilobits per second), but Pace is working on a V.90 upgrade (up to 56Kbps), which wasn't yet available for us to test, but may be available by the time you read this.

The Solo is an impressive device – it looks cool as well as doing its job extremely well. It's not the only product of its type – the Olitec Message Modem does a similar job, and we'll be reviewing a new version next month. But overall, the Solo is an excellent package.

Richard Baguley

★★★★★

Pace Solo

Price *£199 (inc VAT)*
Pros *Does an excellent job of combining the features of a fax, modem and answering machine*
Cons *Software is a little bit confusing*
Contact *PMC Consumer Electronics*
Phone *(0990) 561 001*
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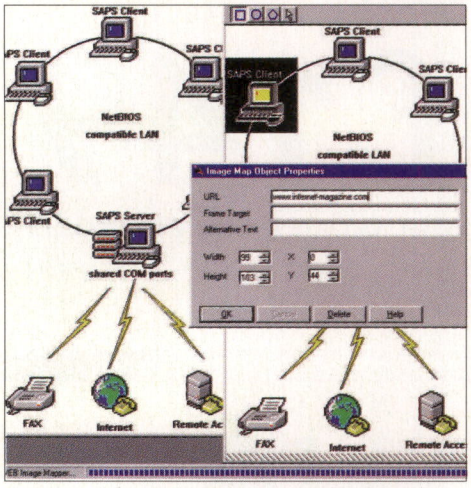
GRAPHICS TOOLS

SPG WEB Tools

A wide-ranging collection of Web tools – some good, some a bit flat

As the name suggests, SPG WEB tools is a collection of tools designed to create graphics for Web pages. It includes a good range of products including an IMG tag checker, animated GIF creators and animator (which creates animated GIFs from a series of image files). However, some of the other tools are less useful, such as the FlareFX renderer (which creates lens flare & explosion type effects) and the Web background renderer (which can create Web backgrounds, but only using the effects included in the program).

But the program does have some quirks. For example,the 3D object renderer works with objects in a special format and 'will use most .3DS models', as the help file puts it. The 3DS files are produced by 3D Studio, but when we tried, the program refused to load some of the files. It loaded others, but the objects weren't correctly processed. Some of the other tools also have irritating quirks, like the Web spider (which automatically downloads images from Web pages), which looses all your settings every time you go into it. It's a real pain having to enter the URL and destination directory every time, even if they haven't changed.



One of the better tools included in SPG WEB Tools is the image map editor

tools for simplifying the creation of some of the more fiddly aspects of HTML, such as JavaScript rollovers and image maps. There are also more image-focused tools, such as a 3D text and object renderer, a tool for building flares and one for automatically uploading images to a Web site.

The tools exists in two forms – as a standalone graphics program (called ColorWorks) or as a set of Photoshop-style plug-ins (called WEB Tools). Both are pretty much the same, but WEB Tools is likely to be more widely used. Since it works as a Photoshop plug-in, it can be used not only within Photoshop, but in most decent image editing programs, including Paint Shop Pro, Fireworks (reviewed opposite) and PhotoDeluxe.

The usefulness of the tools varies from extremely good to rather poor. There are some excellent tools, such as the WEB Saver (which shows how an image will look with the colours reduced to make the file smaller) and the GIF

As with many programs of this type, SPG WEB Tools suffers from being a jack of all trades but master of none. The 3D renderer is nowhere near as good as a dedicated program, while the HTML components don't do anything a high-end Web authoring program couldn't do. It's not a bad combination of tools, but it's a pity the individual tools aren't more powerful.

Richard Baguley

★★★☆☆

SPG WEB Tools

Price *$199 (around £130)*
Pros *Some useful tools, such as the Web Saver*
Cons *Less useful tools, such as Web spider, and a rather quirky design*
Contact *SPG Net*
Phone *(001 305) 362 6602*
www.spg-net.com

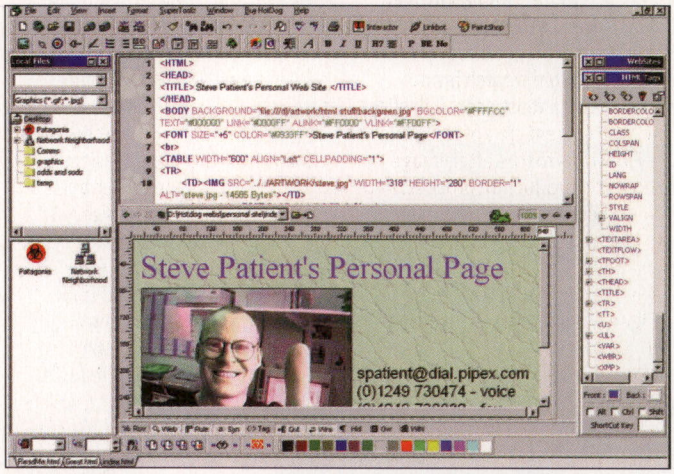
WEB EDITOR

HotDog Pro 5.0

It may be bigger, but is the new offering from Sausage software any better?

The latest version of HotDog has a new-look shell – similar to Homesite's Launchpad – and majors on Web site management, weak in previous versions. It also continues to add full support for HTML 4.0 standards you won't even find properly implemented in browsers yet.

Inevitably, it's large, complex and not simple to master. The Help system isn't nearly as good as it could be – despite the addition of tooltips and context sensitive help – and it has a few bugs.



The new look HotDog Professional 5.0 is faster, richer in features and now includes site maintenance, but still doesn't allow WYSIWYG editing

HotDog 5.0 is bolstered by partner apps – Paint Shop Pro (image editing), Interactor (Dynamic HTML support) and Linkbot (Site analysis). The documentation for Interactor is particularly poor, but it's easy enough to use.

You also get macros, automatic updating of SuperToolz (plug-ins for HotDog) from the Sausage Web site, regionalised dictionaries, unicode support and other goodies essential for Web sites which might be aimed at users anywhere in the world.

Version 5 loads, updates and previews screens faster as well as loading resource windows dynamically (which is faster). It also has neat features to help you work at greater speed, such as thumbnail generators, collapsible text sections (an outlining feature), property sheets and code completion. It produces non-proprietary code in Windows, Mac or Unix file formats and lets you use browser-specific tags.

On the down side, Sausage hasn't included a WYSIWYG mode, so you're forced to edit the code in your Web pages. This is unnecessary, perverse and presumably exists to differentiate HotDog from Microsoft's FrontPage.

In early versions of CoIelDRAW you edited a line drawing and hit a preview button to see what had happened. HotDog 5.0 is like that. Although it has the Rover preview window (and browser), you can't edit in it – you have to write code.

No doubt some coders prefer to keep page creation a mysterious process, but this reviewer isn't among them. A WYSIWYG Web page editor with code access is easier and faster to use than a code editor with a WYSIWYG view. It's time to move on chaps – though existing HotDog users will love it to death.

Steve Patient

★★★☆☆

HotDog Professional 5.0

Price *$199 (around £130) upgrade $100 (around £60)*
Pros *Does just about everything*
Cons *Doesn' t allow WYSIWYG editing*
Contact *Sausage Software*
Phone *(00 613) 9662 2627*
www.sausage.com

GRAPHICS TOOL

Fireworks 1.0

A well thought out all-in-one Web graphics tool that's a designer's dream

The premise behind Macromedia's Fireworks is simple – it's a single product designed to handle all your Web image needs. Not only that, but Fireworks also lets you use vector or raster images, edit each stage of the creative process, add JavaScript functions and create animations.

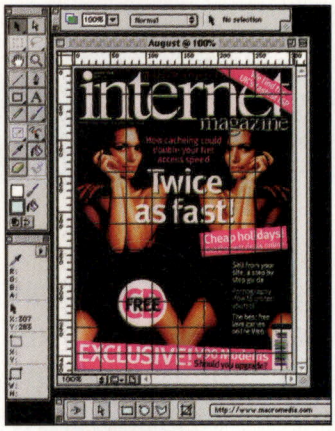
Creating an image from scratch is easy, and Fireworks has a similar range of tools to Photoshop, Illustrator or Freehand. The font handling is particularly good, with tracking, kerning and leading all available and easily edited.

Starting from scratch is an option, though most users will stick with their current crop of tools and use Fireworks for the after-image editing and production process. And this is where the package comes into its own. Macromedia has done its homework and produced something that does what every designer wants – makes life just a little bit easier.

You can start with vector graphics or raster images – it makes no difference to Fireworks, which is great as you can just dive straight in. Editing images, adding text, animating and so on are all one or two mouse clicks away, and the interface makes it easy to understand what each tool does without recourse to the manual (always a good sign).

Another nice feature lets you go back any number of steps and edit each stage of your process. This alone will save designers hours of pain as the general practice of creating an image that's then flat and uneditable no longer applies. If your client decides to change their mind, you can open your native Fireworks file and make the appropriate changes.

Two tools stick out as being good selling points – animation and batch processing. The animation tools are equal to both standard tools Flash and GIF Builder, and the batch processing is another feature that will save many hours of boring, repetitive work. In addition, Fireworks will create the HTML to go around your image with rollover functions and so on.



The tools included in Fireworks are reassuringly familiar

The bottom line, though, is that Web graphics have both look good and have small file sizes, and Fireworks brings every weapon to bear on the export process. You can choose from multiple export options to get the best combination of image quality and file size, edit the palette of colours, edit or create an animation and create rollover effects. You can then save your settings as a default setting for batch processing. This is the best part of the app, and worth the money alone.

As a Web image production tool, Fireworks has few rivals and Macromedia has thought through the Web graphics process and created a tool which will delight the professional and beginner alike. Web designers now have the equivalent of four or five apps for the price of one – which may explain the £299 price tag. That said, it's pretty much worth every penny, but why does Macromedia charge the same in pounds as it does in dollars?

Mike Hales

★★★★½

Macromedia Fireworks

Price *£299*
Pros *Professional production tools, good interface, multiple export and viewing options, animation and interactive features*
Cons *Needs a powerful machine with plenty of memory, price*
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Phone *(0181) 358 5858*
www.macromedia.com/fireworks/

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Readers' questions are answered by our panel of experts. Send your query to faq@internet.emap.com

Richard Baguley is our technical editor. He'll be answering your technical questions on everything from relational databases to digital signatures.

Mike Slocombe has designed sites for clients that include Snickers, Zenith Films, Direct Connection, NCR and Evolution. He also produces Urban 75, an irreverent online magazine. Mike will be answering all your Web design queries.

Roger Gann is a freelance computer journalist. He specialises in connection issues. If you're having trouble with dial-up networking or want to know why your 56K modem just isn't talking to your ISP, he's your man.

Michael Chissick is the head of Internet and IT law at Field Fisher Waterhouse, a city of London law firm with 50 partners. He'll be ruling on your legal problems.

Please note...
We can only answer the questions we print here.

Logging the cost of calls

Q Do you know of any software that can log call costs online under Windows NT? And I'm a bit confused – is Outlook or Outlook Express the latest version of Microsoft's email package?
Erica Moser
erica@blckhole.demon.co.uk

Roger Gann replies: While online timer utilities are a dime a dozen for Windows 9.x, ones that run under Windows NT 4.0 are scarce. There is a bit of choice though. First in the queue is RAStimer, which runs under versions 3.51 and 4 of Windows NT. This little utility lets you keep track of your phone bills and Internet Service Providers costs. It comes in two flavours: version 1 can run as an NT 'service' and so logs calls when you're not logged onto the machine; version 2 has a GUI interface, logs multiple connections and allows different charging rates for different phone book entries. Download it from **www.cix.co.uk/~jpsc**.

Then there's Internet Timer 2.1, which hails from the pleasantly named Rat Software. Highly customisable, you can set up five different rates that reflect daytime, evening, weekend and so on. Sadly, you can't actually set up the times for those rates, you have to select a rate from a picklist every time you run the program. Price? A mere three quid. Pick it up from **www3.mistral.co.uk/billparsl**.

Finally, check out TimeOnline 1.10e. The full product costs $29 (around £18) but there's a trial version available from **www.lightman.com/timeonline**. TimeOnline is a system tray utility for Windows 95/98/NT which monitors online activity and estimates the cost of each call.

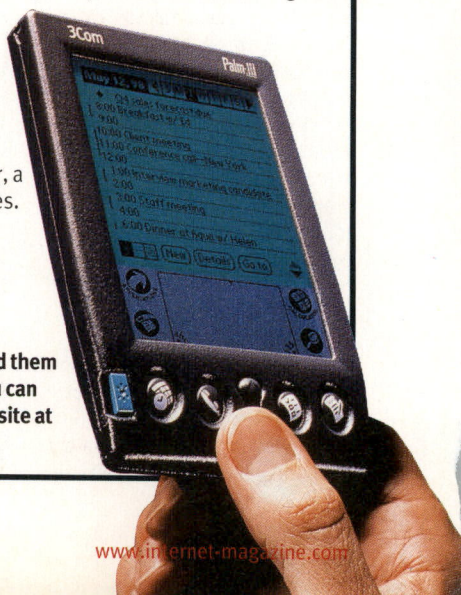
Moving onto your Outlook question, I reckon you're confusing two quite different products here. Outlook is an all-singing, all-dancing personal information manager and mail client that used to come free with Office 97 but is now sold separately. The current version is Outlook 98. Outlook Express is just a mail client that comes as part of the Internet Explorer 4.0 bundle (and Windows 98). It may look cosmetically

Top reader's tip wins 3Com Palm III

Every month, we print a top reader's tip. This could be a handy new way to organise your bookmarks or a cool piece of software that you've come across that you think our readers should know about. But the best part is that if we print your tip, you'll win a flash new Palm III organiser from 3Com!

The Palm III organiser is a great little product. The interface is excellent, there's lots of memory to store your personal information and the sleek new industrial design will impress your friends and colleagues.

The 3Com organiser family comes with a comprehensive suite of personal information management (PIM) software including date book, address book, to-do list, expense management software, calculator, a note-taking application and games. HotSync technology lets you synchronise data between the Palm III and your PC at the push of a button.



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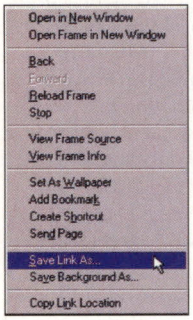
www.internet-magazine.com

similar, indeed a lot of Outlook Express surfaces in Outlook 98, but Outlook Express is simply a mail client and newsreader.

Building links to files

Q I'm building a small Web site for my school and I know that visitors will have to download a file. Unfortunately I don't know how to create a link to this file. Can you help? The files for download will have been created in the PC version of ClarisWorks; some will be text only, while others might contain graphics.

RJ Campbell
rjcampbell@rmplc.co.uk



To download files visitors to your site will have to select the file and then choose the Save As option from the pop-up menu

Richard Baguley replies: At your end all you have to do is create a link to the downloadable files in exactly the same way as you'd create a link to another Web page – just specify the name of the file and where it's located. Getting the browser to save the file to disk is more difficult. You have to tell visitors to the site to right click on the link (on a PC) or click and hold down the mouse button (on a Mac). They can then select Save Link As from the menu and save the file to disk. If the files are in a format other than text or images (such as a Claris Works file), the browser should ask the user what they want to do, and they can then save the file to disk.

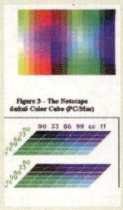
Blocking the bad stuff

Q I'm in the market to buy monitoring software for Net access through our corporate network. We've got approximately 40 users accessing the Net via

The 10 top blunders of Web page design

Never a man to hide his opinions, our resident HTML expert Mike Slocombe outlines the 10 top mistakes not to make when designing a Web page...

1. The 10-ton Homepage



Always try and keep the index page of your site as light as possible. You may well think that your beautifully rendered 300Kb animation of your underpants in 3D is wonderful, but most surfers will not share your enthusiasm.

Try and keep pages under 35K, and warn people about heavy pages in advance – a good tip is to reuse graphics throughout the site. For tips on reducing file sizes – and an impressive online GIF reducer – take a look at Optimising Web Graphics (www.webreference.com/dev/graphics/)

2. The Colour Explosion

Avoid nasty loud tiled backgrounds and try and use a bit of restraint when using colour on the site. Keep it simple and consistent. Your monitor may well be able to render millions of colours, but that's no reason to try and fit them all on the one page.

3. Hideous Music

I'm sure your rendition of *Anarchy in the UK* sounds great in your bedroom, but bear in mind a lot of people surf at work or at night – and inflicting a cheesy MIDI racket without warning is a surefire way to lose friends. If you simply must put music and 'amusing' noises on your site, warn people first – they'll thank you for it.

4. Weird Navigation

Try and keep your sites simple and easy to understand, and work out a consistent navigation style. If you're using graphic links, put up a text-only version at the bottom of the page for those strange souls who surf the Web with their images turned off. Try not to overload pages with hundreds of choices, and always provide links back to the home page and relevant sections. Try and be consistent with your directory naming structure and keep all file and folder names lowercase for simplicity's sake. To make sure your site is accessible for the visually impaired, run it through the excellent online service at www.cast.org/bobby

5. The Mighty Scrolling Page

It's no fun scrolling down a page that seems to stretch on forever, so if you have large sections of text, try splitting them up into smaller pages. Consider using columnised text in tables as it's a lot easier to read.

6. Links to Nowhere

Another surefire way to annoy visitors is to not bother checking your links or code. Give your site an online once-over at the Web Validation Service (http://valsvc.webtechs.com) and the Webgarage (www.websitegarage.com).

For offline checking, try out the excellent CCE3310 Validator (www.htmlvalidator.com), Sitehog, (www.cix.co.uk/~allied-display/redhog/sitehog.html) or, if you're feeling a bit flush, Linkbot 3.5 (www.tetranet.com).

Other great online resources include Microsoft's Site Builder's Workshop (www.microsoft.com/workshop/default.asp), The World Wide Web Consortium – for official HTML specs (www.w3.org/hypertext/WWW), the Web Workers Toolbox (http://web.bentley.edu/empl/c/rcrooks/toolbox/index.html), and Web Authoring Reference Resources (http://desktoppublishing.com/webreference.html).

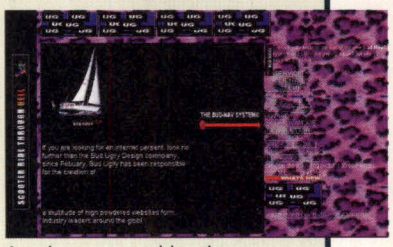
7. Ancient News

If you're going to have a news section on your site, make sure you update it! Nothing sends people packing quicker than a Web site that's full of out of date information. If you can't be bothered, link up to other relevant news sites – but be sure to drop them a line first, out of courtesy.

8. Frametastic Frenzy

That complicated six-window frameset may look well 'kewl' on your 17-inch monitor, but for those using smaller monitors it will look a complete mess. Unless there's an overriding reason for using them, avoid frames.

9. Pointless gimmicks



Another way to add to the unpopularity of your site is to festoon it with useless gizmos, flashing fluff and slow, browser crashing Java. For a look of some of the worst examples, visit www.voice.com/bud/bud.html

10. Hideous Design

It's often neglected, but good design will help you get your message across quickly and efficiently. Try to avoid filling up your pages with corny clip-art, pointless animations and flashing Under Construction banners. If you're a hopeless case when it comes to design take a look at www.htmlhelp.com, www.widearea.co.uk/designer, www.sun.com/sun-on-net/uidesign and www.killersites.com.

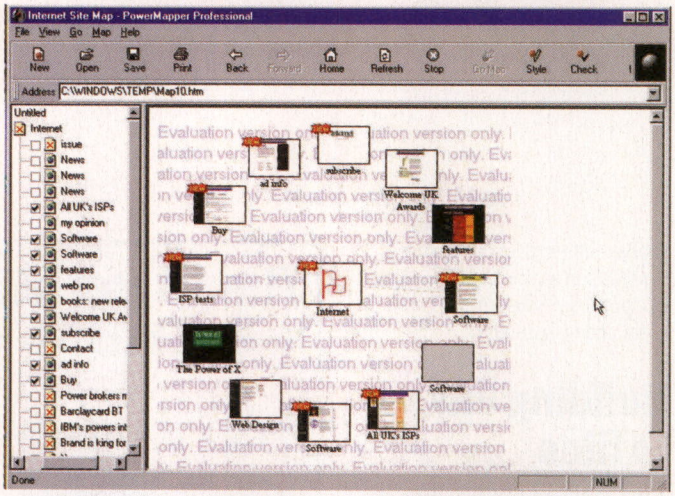
Navigator 3.0 running on Windows 95. What would you recommend?
Steve Ryder
sryder@wme.co.uk

Roger Gann replies: Underpinning most content blocking software are two acronyms, PICS and RSACi. PICS (Platform for Internet Content Selection) is a system for rating the content of Web sites endorsed by the World Wide Web Consortium. The Recreational Software Advisory Council (RSAC) is a non-profit organisation that rates online content that supports the PICS rating system. Site publishers label their site with HTML meta tags.

Now we've got support for PICS built into the browser, it's simple to restrict access only to sites that have been rated and to fine tune the level of access to other sites that might contain inappropriate material. These settings are password-protected. While Internet Explorer support both PICS and RSACi, Netscape has only recently announced support for RSACi. So you might want to consider upgrading your browser.

Another solution is to install filtering or blocking software, such as NetNanny **www.netnanny.com**, SurfWatch **www.surfwatch.com**, or CyberPatrol **www.cyberpatrol.com**. Most filtering products use lists of URLs or match words, phrases, and patterns to block content. But the products vary in how they monitor: some use keyboard input, display output, or the local PC Winsock, others a proxy server, to filter content based on their lists. The problem here is that these utilities were originally designed as parental control packages and so might not be appropriate for corporates.

A recent entrant in the corporate Web filtering market isContent Advisor for Firewall-1, which is built in to Check Point Software's firewall product. The product has 29 different categories of site content and you can add more. SurfWatch is also available in a corporate edition.



Powermapper can automatically generate maps of your site

Email on my handheld

Q I'd like to use my handheld Windows CE device to access my email. Do you know which ISPs support this?
Gary Millar
etlgami@etlxdmx.ericsson.se

Richard Baguley replies: Most ISPs should be able to handle Windows CE. CE supports standard PPP (Point to Point Protocol) connections, so as far as the ISP is concerned, it's the same as connecting with a normal PC. Windows CE also has a built in mail client, Outlook Express, which supports all the appropriate email standards.

The only service providers I'd be wary of is those that use their own dial-up software, such as AOL and CompuServe. If they don't do a CE version of their software, you might have problems.

Gobbledegook

Q I've been trying to put Web pages together for German readers. The problem is, we've always found that text turns up as gobbledegook when it's placed on the Web server.
rains@mail.netcentral.co.uk

Roger Gann replies: I think your problem boils down to a character set mismatch. The key here is to add German language support to your UK browser. So, for example, in Internet Explorer 4, you go to View/Internet Options/General and then click Languages and add the appropriate German languages. If this option isn't available you'll need to get a multilanguage support pack for IE – get this from the IE page at **www.microsoft.com**. The Select Language process is much the same with Navigator.

Map the site

Q I've been asked to provide a printed diagram of my site's layout. How do I do it?
Neil Fraser
n.fraser@dial.pipex.com

Richard Baguley replies: There are several programs which will provide a map of a Web site for you, such as LinkScan (at **www.elsp.com/linkscan**), Interactive Site Mapper from Q-Tekink (at **www.q-teknik.se/products/sitemapper.htm**) and PowerMapper from Electrum (at **www.electrum.co.uk**).

All of these programs will generate various different types of maps of your site, including normal GIF files. You could also build an image map that can be used by visitors to your site to help them work their way around your pages.

im

Legal Brief: is spamming illegal?

How do the UK courts view spammers? What can you do if a spam crashes your system? Michael Chissick looks at the UK laws on spamming.

Unsolicited email, commonly referred to as spam, is big news. Getting junk mail might be annoying, but spam, on the other hand, is a real menace because you have to pay to receive it and, if it comes complete with attachments, it can cause a network to crash. But can anything be done to stop the spammers?

There have been several US court cases, mainly brought by ISPs against the leading US spammer, Cyber Promotions. In 1997 it was held that the continued spamming of CompuServe's customers by Cyber Promotions was a trespass, as a result CompuServe was granted an injunction.

The legality of spamming hasn't been tested yet in the English courts, however. A possible course of action may lie under the Tort (Interference with Goods) Act 1977. To be successful, a plaintiff needs to establish a trespass to goods. You would have to show that the spam has affected or damaged your personal property, such as software, data or a hard disk. There are considerable legal hurdles though. Nevertheless, it's likely that the English courts would adopt a similar approach to that taken by the US. It's also possible that spamming is a criminal offence. If a spammer has been warned not to send junk email and continues to do so, it could constitute an offence under the Computer Misuse Act 1990.

Like many other problems associated with the Internet, we need some specific legislation to deal with the problem. After all, according to a recent survey by Novell, spam costs British and Irish businesses some £5 billion a year. Washington State has some new legislation that makes it illegal to use a dummy or forged return address. It's unlikely that anybody is going to risk time and money on legal proceedings against a spammer when there's no guarantee of success.

You can now make your views on this subject known to the Government. The Government has recently issued its Consultation Paper in connection with implementing the Distant Selling Directive. Hopefully, consumers will be given the clear legal right to opt out of receiving spam when the legislation is introduced later this year.
www.open.gov.uk/
Michael Chissick is a partner in the law firm Field Fisher Waterhouse. You can email him at **Michael.Chissick@ffw.sprint.com**.
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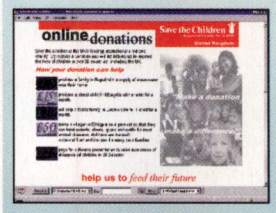

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- Fraud control

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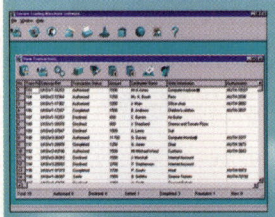

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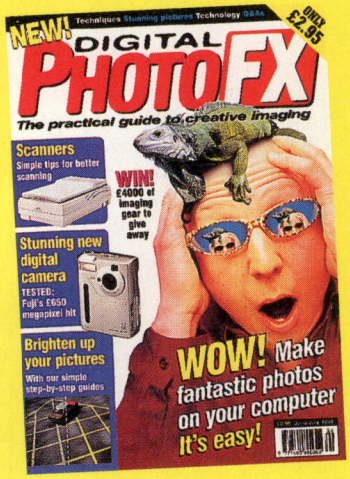

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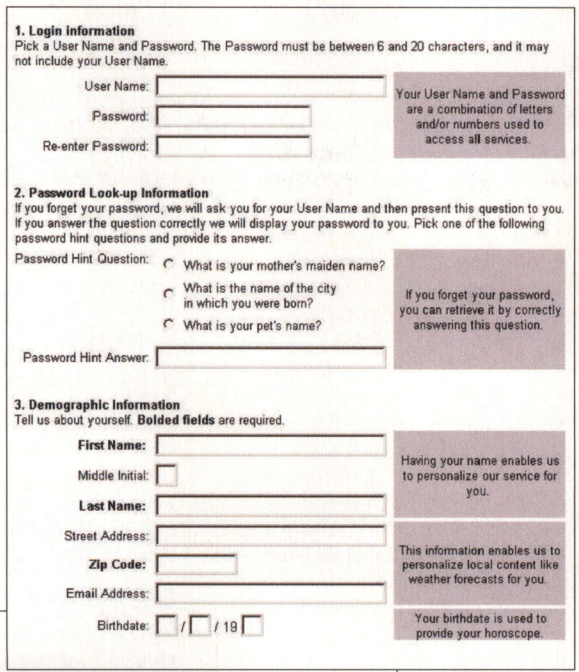
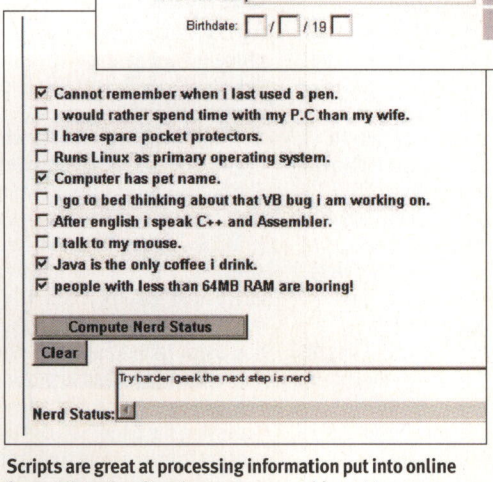
Getting started with scripting

In the first of our series on scripting for the Web, Tim Rafferty explains why you shouldn't be scared to delve beneath the static world of HTML and enter the dynamic world of browser-based coding

What kind of person are you? Are you happy to have the world scoot by without the vaguest idea about how it's all put together? Do you believe that ignorance is bliss? Or do you secretly long to take control, to manipulate, to create? Aren't you sick and tired of all those little people who always think they know best? Isn't it time you stood up for yourself, shaped your own destiny, set your own objectives and showed the world that you're in charge, that you call the shots?



Boring but neccessary entry forms like this can use scripts to make sure visitors to the site provide all the proper information



Scripts are great at processing information put into online forms. Though quite why someone would want to process this data, I'm not sure

Of course you've had enough. You want knowledge. You want power. You're mad as hell and you're not going to take it any more. So rise up. Cast off your shackles. Join me in the glorious search for freedom, let's band together and learn to write scripts for Web pages.

Eh? Well look, I have to write a series of articles on programming and that only ever appeals to two kinds of people. Those who think beauty is encapsulated in a well formed function, and those who would like to know a bit more about what's going on but don't know where to start. I'm assuming you're of the latter persuasion, and I'm hoping your prime motivation in wanting to get to grips with Web scripting is a mixture of curiosity and practical imperatives.

The programming buzz

Writing any program can be frustrating and difficult, but the rewards do make the process worthwhile. In writing a program, you get to decide exactly how people can view your information or achieve a particular task. And with browser-based programming and the reach of the Internet, the ability to influence the responses and actions of hundreds, maybe thousands, of people should provide enough of a buzz to persevere.

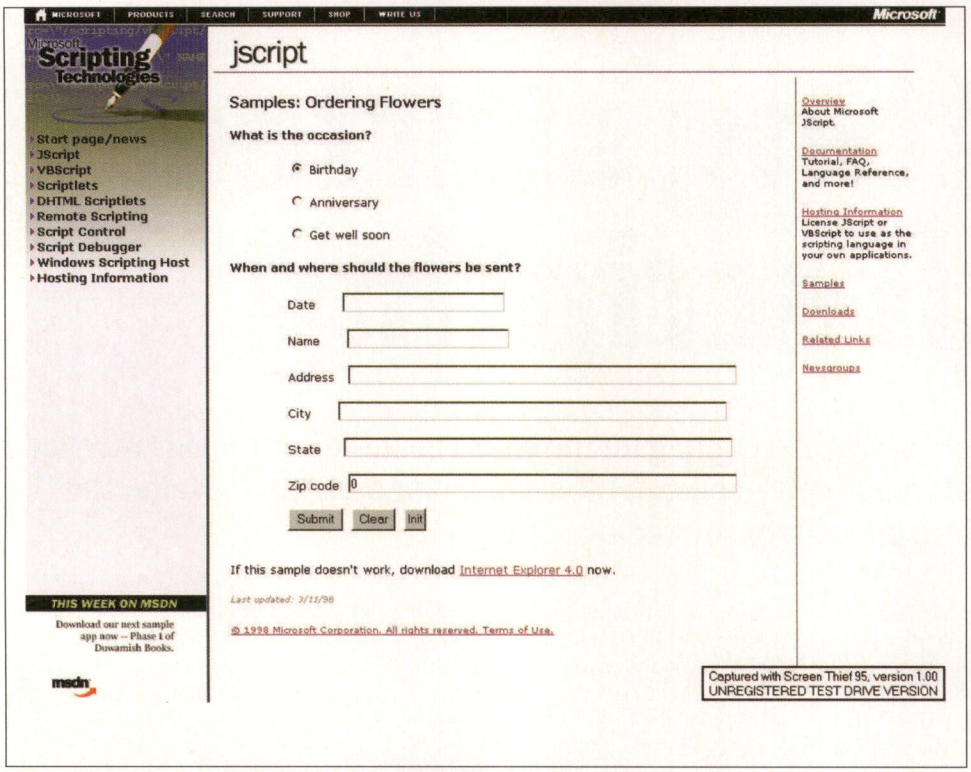
Understanding browser-based programming doesn't require too much brain-churning if you start with a few basics. For a start, what is a program? It's just a set of instructions expressed in a manner that can be understood by whatever is going to carry them out. So a knitting pattern is a program for your granny. A recipe is a program for a cook.

A set of instructions for a computer has to be written by a human and understood by another program, which can translate them into something a lump of electronics can then act upon. As humans have to write the original programs, they have to express their intentions in a sub-set of a natural language such as English. These sub-sets are the programming languages, each of which is designed for particular tasks. For example, COBOL is a language built to handle structured records such as driving licences or birth certificates.

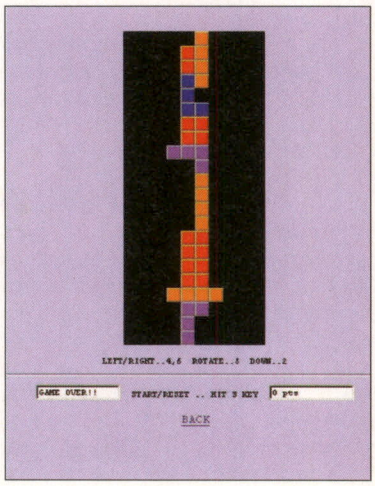
The instructions can then either be translated one at a time, each and every time they need to be executed. Or they can all be changed at once into another set of instructions which a human can't read but a computer can. In the first case, the program is said to be interpreted and in the second it's said to be compiled.

An interpreter does a relatively simple job because it doesn't care about the next instruction it has to act upon. It simply has to translate the current statement. A compiler has to be much more sophisticated – it has to make sure the whole set of statements will work on the computer once they're handed over to the the operating system.

As a consequence, it's harder to write programs that are compiled because you have to make sure your language sub-set



Above: Of course Microsoft has its own scripting technology. This is JScript, which can be use to, er, create forms



Right: Look, you can even program fanastic and original games like this one.

is followed accurately. The trade-off is that the compiled 'object' code doesn't depend on the speed of the operating system and is generally pretty fast.

On the whole, interpreted language is easier to use because the interpreter won't impose as many prerequisites before it executes your efforts. But it will be slower than compiled code because of the on-the-fly translation process which is going on in the background. But interpreters are becoming more intelligent. They're now usually called 'run-time environments', incorporating some background compilation techniques to speed up program execution.

Understanding the basics

But why should you care? Because understanding the concepts behind scripting should help you understand the fundamentals and attractions of browser-based scripting. For a start, there really isn't any proper definition for a script and no clear agreement on what are and are not scripting languages.

Repetitive tasks for a word processor or spreadsheet used to be expressed and executed in a macro. Macro languages used tasks specific to an application, such as moving the cursor to the next cell in a spreadsheet. Because they were so specific, they could be generated automatically by capturing keystrokes and mouse clicks. The programmer only had to add loops to repeat certain tasks, or conditional statements to change the execution depending on some event. The resulting macros could then be interpreted by the application as if it were human. The point is that there was no 'programming environment'. The programmer only needed experience of using the application, and the interpreter was buried in the depths of the word processor, spreadsheet or whatever.

This is a good way to approach browser-based scripting. The application is the browser, the interpreter is buried inside the browser, and the scripting languages are designed specifically to manipulate the browser. In a weird way, browser-based scripting has also matched the way that traditional macro development has evolved. Original macros appeared to be linear. They were not much more than a list of discrete statements to be executed one after another. Today, the macro capabilities of products such as Excel are far more sophisticated. And they're not really called macros anymore, they're called scripts – getting to see the parallels?

But a linear set of intructions longer than 30 or 40 lines a would be difficult for a human to create and understand. The next step was to break down scripts into different procedures, each of which could be called upon by the main section of instructions.

Finally, scripts, including browser-based scripts, have evolved to take advantage of object-based techniques. A lot of scary stuff gets written when it comes to objects. Don't fret. As far as browser-based scripting goes you only need to understand some basic ideas.

First, splitting a program up into procedures helps our poor brains to cope with the complexity of a program's overall design. However, if a procedure could become totally autonomous, then we could build bigger programs by combining lots of these prefabricated clever procedures. That's all an object is – a small lump of code which can exist on its own and be called up when necessary. The slick thing about an object is that to use one you don't need to be the person responsible for its creation. You only need to know what data the object expects to receive and what it will return as results. So your program feeds it some input, it spins around a few times, sends something back, and then waits for the next time it is needed.

How you create objects and then place them in hierarchies is the subject of 'proper' object-oriented programming. Happily, scripting just deals with the end result, providing you with a set of pre-built objects which you can bolt into your own programs. The twist to this is the browser is also a program made up of objects. As a script developer, not only do you get to play with pre-built objects to handle things like a user's input, but you also get objects to manipulate the browser itself.

So browser-based scripts are object-oriented, interpreted programs executed within a browser to manipulate both the way someone interacts with what the browser presents and the way the browser itself behaves – phew!

Get dynamic

If you've followed this so far, then you're probably wondering why you'd want to get involved with scripting and what your alternatives are.

There are a few reasons why you might want to start writing Web scripts. The first is that you can get more from a Web page than you get from straight HTML. Even though HTML is being stretched into all kinds of new and interesting shapes, it is still, for the moment, a mark-up language. It dictates how static things appear in a browser, but it can't really be used to provide any sense of interaction with someone accessing the page. You can use it to present form controls such as push buttons and text fields, but if you want anything to happen when a button is

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*Internet Magazine June 1998

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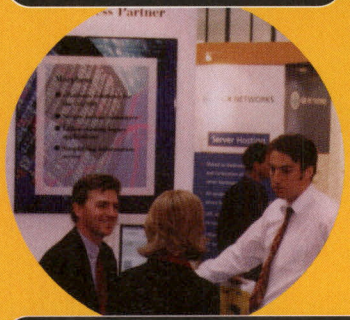

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pushed, you have to write the code in CGI programming format on the Web server. Then you have to pass values from the Web page back to the server, and have another program on the Web server generate more HTML, along with any results from that program, before sending the whole kit and caboodle back to the browser.

So while server-side programming is one option, browser-based scripting gets around lots of messy interaction between a server and a client and can provide fast responses to user-generated events. Indeed, an important role for browser-based scripts is to weed out any invalid responses before passing back values to a server-side CGI program. For example, the next time you fill in a Web form and get pestered for missing out important fields such as your postcode, you've probably been stopped in your tracks by a little bit of browser script.

Improving data entry procedures is dull but worthy. Having text bounce around the screen, opening new browser windows as required, or generally making a Web page a more interesting place to be are all far more exciting pursuits. There's a definite thrill to be had from designing scripts which animate the whole browsing experience (OK, so it's not naked parachuting, but wait until you see the first fruits of your labour – you'll be surprised how chuffed you feel).There are also competitive reasons to introduce scripts. When there's a trillion other text-based Web pages out there, the one that offers something just a little bit different could get all the attention.

Putting the script in

So where do you start with scripts? Inevitably, it's with HTML. As well as interpreting scripts, the browser has to understand where the script fits in relation to the rest of the stuff it's putting on the Web site. Thankfully, declaring a script in HTML is as easy as enclosing it inside a tag pair. So...

```
<SCRIPT language=JAVASCRIPT>
document.write("...this bit
was added by a script");
</SCRIPT>
```

is all you have to do to set up a script in a bog standard piece of HTML.

Declaring a script is one thing, but knowing when it will do something is another matter. If you think of the browser as an interpreter, then you won't be surprised to learn the above script will do its stuff wherever you place it in a page of HTML. So if it's the first thing in the HTML, it'll appear at the top of the page. If it's placed halfway through, then it'll turn up about halfway down the page.

This is all hunky dory if you want to treat scripts like other HTML objects, but they're far more useful if they execute in response to some external event. Events in terms of HTML are either related to what the browser itself is doing, such as loading a page, or what a human is doing, such as pushing a button or filling in a text field.

Putting this in your HTML means that nothing happens until the browser is asked to handle the event...

```
<FORM NAME="form1"
METHOD="get">
<INPUT TYPE="button"
NAME="button1" VALUE="Push Me
To Close The Browser"
onClick="window.close()">
</FORM>
```

The only other thing you really need to know about how scripts are structured is that it's easier to declare event-handled scripts at the start of your page of HTML and then make references to them as you build up your page. For example, if you wanted lots of things to happen when a button is pushed, or if the result of pushing several buttons is the same, then it would be laborious to duplicate what had to be done in more than one place. The answer is to create script functions like this...

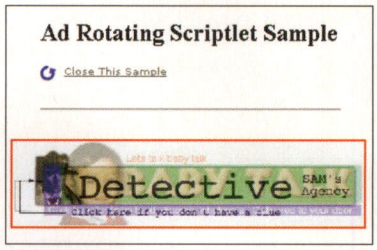
```
<SCRIPT>
function closeWindow() {
window.close();
}
</SCRIPT>
<!– put some HTML here –>
<INPUT TYPE="button"
NAME="button1" VALUE="Push Me
To Close The Browser"
onClick="closeWindow()">
```

With the closeWindow() script created you can refer to it anywhere in your HTML and can alter what the function does in just one place.

The really important thing to grasp from these examples is that a lot of behind the scenes programming is being taken care of by using these scripts. The mechanics of closing a window are complicated, and remember that these scripts will work not only inside Windows, but also in other graphical desktops such as Unix's Motif. By making the simple statement window.close(), you're getting a lot of work done for very little effort. Which is the benefit of object-oriented techniques.

In this case, a window is said to be an object which has both attributes, such as its size or what text is in its title bar, and 'methods'. A method is simply a task which the object can carry out, such as closing itself. You don't care how it does that,you simply invoke the method and off it goes.

Now for the bad news. There's more than one browser-based scripting language. Each has its strengths and weaknesses, and it's not always obvious which one to choose. Different browsers react in different ways to these scripting languages. Oh yeah, and different releases of the same browsers react in different ways to these scripts. (Think back to that description of interpreters and you should get an inkling of why this is the case). You can see some of these differences by simply embedding the above scripts in HTML pages and running it in versions of Internet Explorer, Navigator and Opera.



These dynamic pages don't show up well in the magazine, but here a DHTML script has opened a new window and is diplaying a number of different images

And there's more. Scripts are 'browser bound' – they have no idea what's happening on the network and cannot interact with HTTP. There are little or no security features. The source code of your scripts gets embedded inside HTML for all the world to see... and copy. Scripts can only work with what exists on the page, or with what a visitor to the site enters, they can't get information from the machine on which they're executed. And they're pretty rubbish at handling images.

Get with the program

Still interested? Well, you should be – for two good reasons. First, scripts are an ideal introduction to Web programming. Secondly, the whacky world of scripting is moving rapidly and in lots of different directions. While this does bring up some horrible compatibility issues, it does have the advantage of putting you in a cutting edge field where script language and tools providers are competing fiercely to entice you into their way of development.

The next few articles in this series should help you decide which scripting approach is best for you and where this whole scripting thing is headed. im

Coming up in this series...

October The difference between JavaScript and Java. How Javascript programs work
November What you can and can't do with Dynamic HTML
December Microsoft's take on scripting
January Perl? Who, or rather what, it is and why you need to know

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IM 8/98

How to add chat to your site

Chat is fast becoming one of the best ways to get users to come back to your site. David Bradwell explains how you can add a community feel to your site

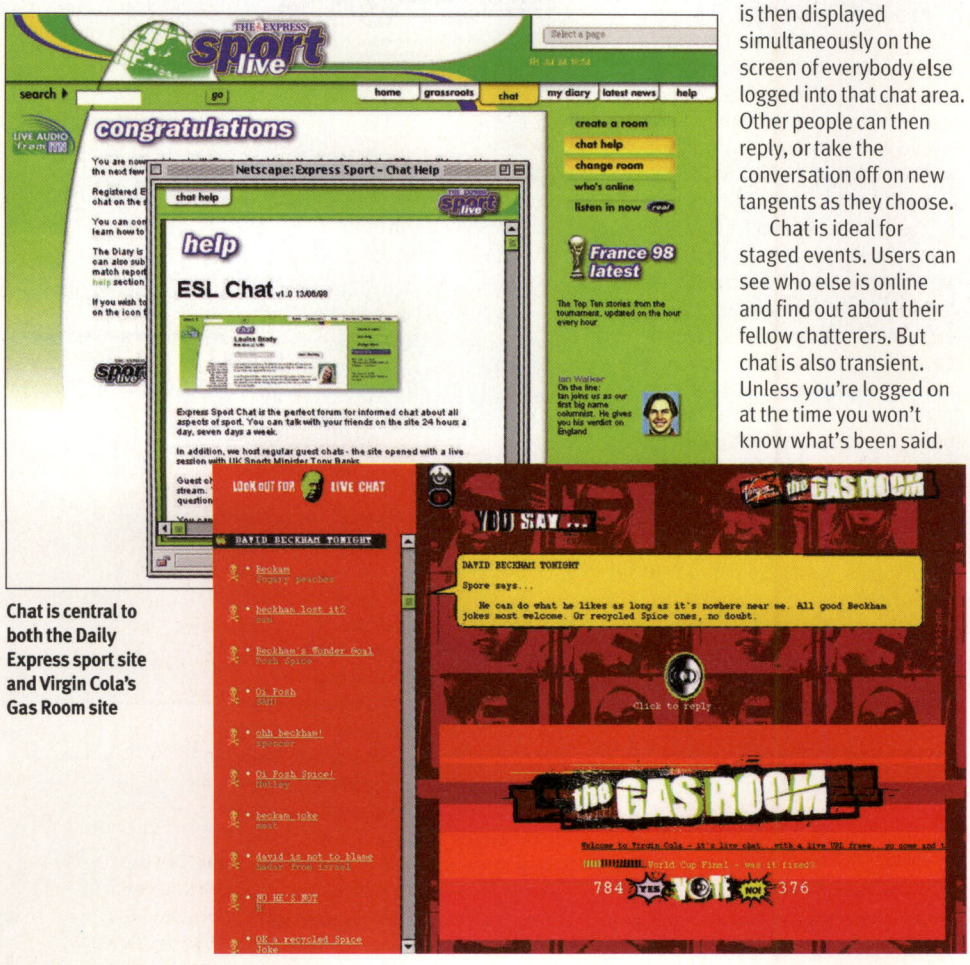
The Internet existed long before the invention of the Web. In the early days, the Net was primarily a tool for communication. Those technically inclined could set up email programs, browse through messages in hundreds of newsgroups, and talk to each other on systems like Internet Relay Chat. For those with the technical know-how, a sense of community was born.

With the Web things are different. It's possible to visit a site, view information, and leave again in complete anonymity. Now Web site owners are looking back to the early days for ideas on attracting visitors and making sure they return. Live chat can strengthen the bond between site owner and visitor, and make for a more enriching time online. Major sites are now offering live chat and conferencing areas. ITN does it. Yahoo and Excite both do it. Some ISPs even specialise in chat: over 30 per cent of AOL's global traffic is chat-related.

Chat vs discussion

While chat rooms and discussion forums are closely linked and share many of the same principles, it's important to understand the differences between the two. Chat is a real-time interaction between two or more users. They can each type in text and hit the enter key. This text is then displayed simultaneously on the screen of everybody else logged into that chat area. Other people can then reply, or take the conversation off on new tangents as they choose.

Chat is ideal for staged events. Users can see who else is online and find out about their fellow chatterers. But chat is also transient. Unless you're logged on at the time you won't know what's been said.



Chat is central to both the Daily Express sport site and Virgin Cola's Gas Room site

without your knowledge. Despite, or rather because of this, chat is the fastest and most interactive form of communication on the Net.

Discussion forums also let your visitors have a say, but in a far more permanent manner. A forum visitor can post a message which remains online, as though it was a piece of paper pinned to a notice board. It stays there for everybody to see, and subsequent visitors can add their own notes. In this way, threaded discussions take place, the subject of each debate is known as the thread.

Visitors don't all have to be logged on at the same time. When you visit a discussion forum you simply browse through recent messages to see if any of them take your fancy, and then either read, reply, or ignore them. You don't know who else is in the forum, while you're there and you don't have the opportunity to discuss issues in real-time. However, postings tend to be longer and more thoughtful than in a chat room, and more people can take part.

Chat was the core proposition of the Virgin Cola Gas Room site (**www.virgin cola.co.uk**). "The purpose was to enable users to talk to other like-minded people," says account director Lynette Gracias. "They can do it through either posting a message on the noticeboard, or if there are more than two people looking at the site, the live chat icon (currently a man's head) explodes and invites them to live chat." The site launched at the start of April this year, and now 70 per cent of visitors use the discussion forum, while 30 per cent engage in live chat. "It's been very successful," says Lynette. "The majority of users to the site use the discussion areas and half of these go on to live chat. As with most sites, when it launched usage was high, however it has tailed off into two types of users; a core group that keep visiting the site and, a substantial number of new visitors."

Likewise, *The Daily Express'* Internet efforts have centred around chat. The Express Sport Live site (at **www .express-sport.com**) chat room has

been live since the site's launch in June, and it encourages discussions between visitors and special guests about sporting events. "We believe it's essential for a sports site to have a thriving chat area – to the extent that every story on our site has its own message board," says editor Matt Stone. "We're looking towards the US model of interaction between the stars and sports fans. We've had a great response to our live chats so far. We'll be having Tottenham keeper Ian Walker chat each week during the season."

Danger signs

Unfortunately there are dangers inherent in hosting either a chat room or forum on your site. They can cause embarrassment and, potentially, lead you into legal trouble, so it's worth considering what you could lose before going ahead.

Remember, you don't have much control over who enters your site and what they say when they get there. It's possible to password protect discussion areas, and that may well be worth considering, but if you do this you will lose the benefit of being able to gather opinions from the widest possible cross-section of your traffic.

Imagine the scenario: you're a holiday firm and you add a discussion forum to let visitors swap travel tips, and experiences of excursions abroad. However, take your eyes of the site for a day and when you return you could well find messages (possibly from morally-dubious competitors) criticising the service you offer and recommending that you travel with another firm. This is obviously bad publicity. Perhaps worse, imagine the damage that could be done by somebody openly criticising a competitor on your site. What would happen if the competitor saw the remarks, and decided you were legally responsible for publishing them? A court action for libel could ensue, and you may end up on the business end of a healthy legal bill.

The golden rule is that if you have a chat room or discussion forum, and you care about what goes on there, you need to monitor it closely. As the site owner, the chat room software should allow you to bar people who are repeat offenders. Also, you should be able to manually edit discussion forums to remove offending messages and even complete threads. If you're extremely worried, you can choose to have a moderated forum. In this case somebody (the moderator) manually checks each posting before it's visible to the world at large. It's a fairly onerous administration task, and takes away even more spontaneity, but it's the best way to guarantee that nothing untoward takes place.

Adding a discussion forum

So, assuming you've decided to take the plunge, we'll look first at how to add a discussion forum to your site. Your first decision is where to host it. You can either do it yourself on your own server, or pay somebody else to do it for you. Third party companies will host the forum for you, at a price normally between $10-50 per month. All you then do is provide an HTML link to the forum at the third party site – and this can be invisible to your visitors if you bring it up in a frame, as the frameset will keep your domain in the location toolbar of their browser.

You'll find a list of hosting companies at Forum One (**www.forumone .com**), and a list of 210,000 existing forums. As you can imagine, these cover just about every subject imaginable. Forum One will also help you promote your forum once it's live, and is an excellent resource for information, ideas and advice.

If you're on a tight budget you can set up a free forum at Inside The Web (**www .InsideTheWeb.com/messageboard**). Assuming you're not going to be discussing anything too naughty, all you have to do is answer a few questions, and the forum is created for you. You then add an HTML link from your site and you're in business. As forum administrator you can manually delete messages you don't like and change the look and feel of the forum. The forum is funded by advertising, so you'll be forced to display banners for other companies on the forum, but that's a small price to pay.

If you want to host your own forum you'll have to use your own hardware. Some systems (like O'Reilly's WebBoard – see box out) will integrate with your existing Web server, but others will want a server to themselves. In addition, every time somebody accesses the forum the server will need to run a CGI script. Because of this your server may need to be fairly powerful. There are many solutions to choose from, from freeware Perl scripts which require extensive technical knowledge to much more powerful and expensive professional conferencing systems. Some of these are covered in the Forum Software box (right), but you'll find more information at Forum One and David R. Woolley's Web conferencing resource page (**http://thinkofit.com/webconf**). Other useful resources include:

- Adding Discussion Forums to Your Site by Rex Baldazo
  www.cnet.com/Content/Builder /Servers/Threads/?bl.fd.serv1)
- Tips on Shopping for Web Forum Software by Deb Suran
  www.forumhosts.com/fortip.htm
- Web-based Discussion Forum Software by David Strom
  www.strom.com/ics/wc.html

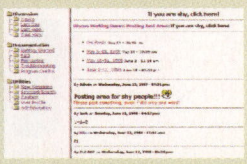
Adding a chat area

Unlike discussion forums, live chat is an instant method of communication. You have even less control over what's said, but you do get spontaneity. Visitors will tell you directly what they like and dislike about your site.

Games developer Team 17 introduced chat on its Worms 2 Web site (**www.worms2.com**) last December to bring together players of both the original Worms game and its successor. Webmaster Adrian Stanley told us: "We introduced the chat area so that fans of the original Worms and Worms2 could chat, discuss and even swap cheats. It's also a way for them to chat to other players overseas. We also thought a chat area would allow fans of the game to talk to its creators." While most people still visit the site to get patches for the game,

Forum software

No matter the size of your budget, there will be forum software to meet it. At the cheap end, you have freeware solutions like **Discus** (**www.chem.hope.edu/~discus/home2 /index.html**) that can be installed on Unix or Windows 95 Web servers. Discus takes about 15 minutes to configure. It works with Netscape and Microsoft browsers and you can have public or private topics.



O'Reilly's WebBoard is the choice of professionals, and carries a professional $699 price tag. It works with any Windows CGI- or ISAPI-compliant Web server and also includes an IRC chat server for 1,000 simultaneous users.
http://webboard.ora.com

Web Crossing is yet more expensive but it works with almost all HTTP servers, and supports the NSAPI, ISAPI, FastCGI and plain CGI interfaces. It's available for Windows NT and 95, Unix and Mac OS. The system is in use by some fairly major sites, including clnet, CNN and the New York Times. The standard license costs $995, while for large, high-performance or mission-critical sites there's a professional version at $4,995.
http://webx.lundeen.com

Other packages you should consider include...
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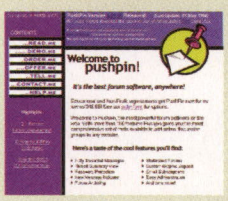

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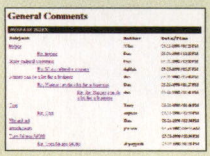

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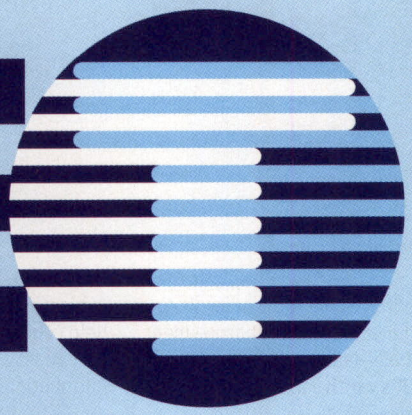

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Chat software

Like discussion forum software, chat systems are often free for try out periods.

ichat's Rooms is the market leading chat system for people who take these things very seriously. It runs on most platforms, has the smallest Java clients and is effortlessly scalable, but a 25 user license is pricey at $744.

www.acuity.com/ichat/index.html

eShare's Expressions Chat is for much smaller setups. It can't handle as many users, but it's easy to set up and runs best on Windows NT. A 50 user licence is $995, while a 100 user version is $1,665

www.eshare.com

Others worth looking at include...

Sequoia Computer Solutions British system which works with every browser. The site also has links to some of the largest UK chat sites.

www.sequoia-computers.co.uk

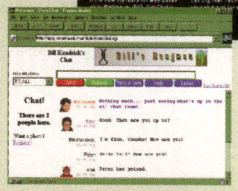
ChatPro Chat rooms compatible with every forms-capable browser for $200.

www.command-o.com/products

DigiChat Buy the software from $495 or let DigiChat do the hosting for you for just under $40 a month.

www.digichat.com

Free Chat Free set of CGI programs, although any donations are gratefully received!



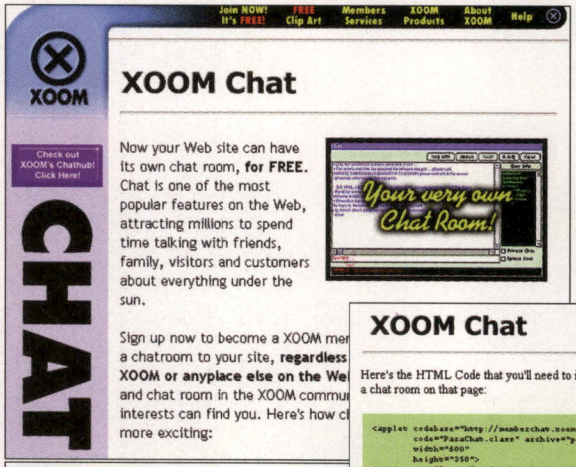
http://cs.sonoma.edu/kendrick/nbs/unix/www/freechat

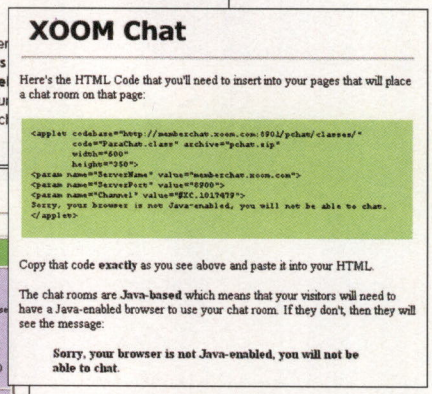
MultiChat Another free system. A more powerful commercial version is available from $60 per year.

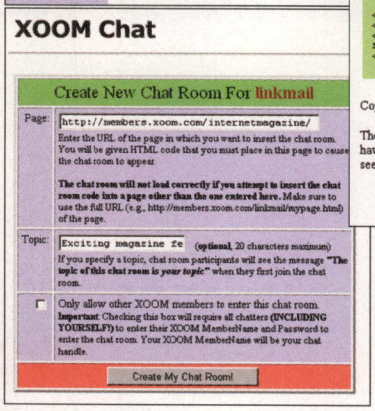
www.multisoftcorp.com

Xoom Xoom is a fast, free chat system that comes with 11Mb of free Web space!

www.xoom.com







Left: Xoom chat rooms are completely free for up to 25 users. Below left: All you have to do is answer three questions... Below: ... and then copy and paste a few lines of HTML

The free option

A great way of experimenting with chat is to set up a free Java-based chat room. Like the free discussion forums, free chat rooms are advertising-funded, but they take only a matter of minutes to set up.

In the early days, Java applets on free systems could take a few minutes to download, but now Xoom (**www.xoom.com**) has got download times down to just a few seconds. The Xoom chat system is entirely free to Xoom members. Better news is still to come though – Xoom membership is free, and as a result of signing up for a free chat room you get yourself 11Mb of free Web space.

The basic Xoom chat room is limited to 25 simultaneous users, but that should be more than enough in the early days. All you have to do is answer a few questions, paste the supplied HTML code into a Web page, and your room is instantly created.

The next step up

The next step up the ladder is to buy and run your own chat room software. EShare's Technology's Expressions is fairly easy to run if you have Web experience, but some others may require a bit of Unix knowledge. The chat server will normally need at least half the power of your Web server, although obviously a lot depends on the amount of traffic you expect to generate. The rule of thumb is that adding chat doubles the load on an ordinary Web server. Web chat consumes far more bandwith than IRC, because it's much more graphics intensive and the server keeps churning out additional content every time somebody new connects. Each new user will also download a Java applet, and if you allow users to send graphics or other files to each other, you're talking a lot of bandwidth.

Of course building a chat room is just part of the battle. You then have to make sure visitors know it's there and that they want to use it. It's worth hosting live events, especially in the early days. One site I worked on held a summer 'barbecue' in a chat room as a way to meet its visitors. Everybody who turned up was given a virtual burger, and a sprinkling of celebrity guests kept the chat alive. You can promote live events on your site itself, in newsgroups, by direct email to your mailing list, and by registering it with the major search sites. Choose the time carefully though. If most of your traffic comes from the west coast of America there's little point doing anything in the morning UK time. Late evening and the early hours in the UK can be good if you would expect a lot of US traffic.

im

ON THE CD You'll find demo versions of chat and forum programs on our cover CD

the chat room has proved very popular. "On average there are about 20 people on at one time" said Stanley.

Live chat generally takes one of two forms: instant messaging in one of the online services (such as AOL) and proprietary chat systems that run in a Web browser. A Web system is the easiest to grasp for the majority of your visitors: it's familiar, and is obviously seamless within your site. Web chat will normally either be Java-based or require a plug-in. For a visitor, the Java option is the easiest to start with – assuming they have a fairly recent browser. The necessary applet is downloaded and runs automatically as soon as the visitor enters the chat area. The Java applet for ichat's Rooms software is under 30Kb, so it takes just a few seconds to load.

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Create your own ratings system

If you want to take on the awesome responsibility of rating the content of the Net then you can set up your own ratings service. Bill Thompson shows you how it's done...

Before you start, don't be afraid to look for help on the Net before deciding which Web rating system to use

Last month we looked at how ratings systems work and the options available in your browser. But to use the Platform for Internet Content Selection (PICS) effectively you need to know how to set up your own rating service, how to get a label for your Web site and how to set up and run a label bureau.

PICS doesn't rate Web sites itself – it's simply a technical specification, describing a way to creat and attach labels to information on the Internet.

The specification includes a format for describing something called a rating vocabulary or rating system. This is a set of categories (such as nudity) and a list of values for each (none to full frontal, for example). It also defines the format for document labels. Finally, it defines ways for labels and URLs to be associated at run-time – a label can be sent with the HTTP header by a server; it can be embedded in the <HEAD> section of the document (in a META tag) or it can be sent separately by a label bureau.

Getting to grips with ratings services

A PICS-capable browser has to get and interpret the content label associated with URLs. To understand the label, the browser needs to know the rating system used to create the label and the rating service providing the label.

The service is described in a file. These files (they're called RAT files by the way) are usually downloaded and stored locally (Windows users will find them in \WINDOWS \SYSTEM, look for .rat files)

There are lots of different rating systems. Internet Explorer uses the RSACi RAT file, while Navigator 4.5 supports RSACi and SafeSurf. But you can install other rating systems (see p115 of our August issue for more details). These rating service files are used by the browser to generate an interface that allows users to see what categories and values the rating system uses. The files are also used to decode content labels and to decide whether the relevant URLs should be displayed to the user.

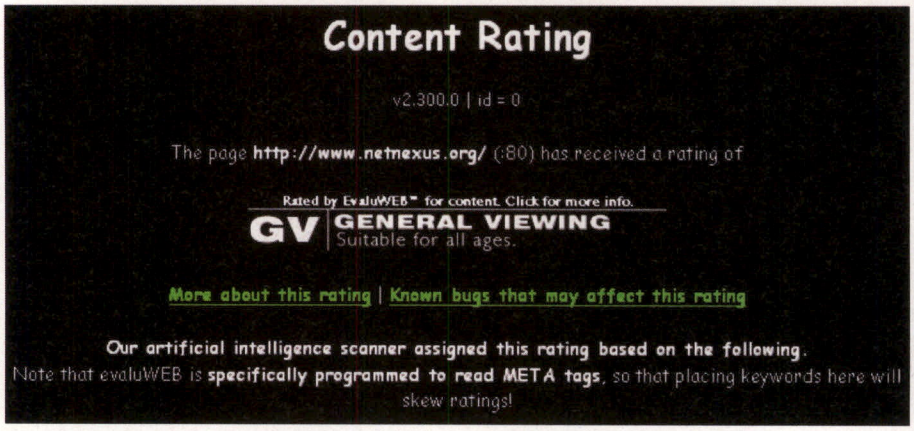
Ratings or Censorship?

PICS grew out of a movement against the censorship of the Internet in the United States. Fearful of what the Government might do, the industry developed PICS to try to demonstrate they were able to regulate and control themselves. It didn't work – the Communications Decency Act was still passed (only to be thrown out as unconstitutional).

But many people feel that PICS has given too much away. That under the guise of being a neutral enabling technology, PICS has allowed those who want to control Net content too much power.

While the use of PICS labels to filter content is a way of controlling access to information, the wider framework (the work on RDF – Resource Description Format for example) makes it apparent that we'll soon be using metadata, such as PICS labels, to speed up searching. And while PICS-enabled proxy servers and other tools do give those in charge of the network software a lot of control, in reality they've had that all along.

Many will remember the arguments from the early 90s about USENET news feeds being blocked by system administrators, and the battle to get browsers on the desktop. The tension between those who want full access and those who want to control the material (for legitimate or illegitimate reasons) will continue forever. PICS labels are just the latest battleground.



The homepage judge sits in the background waiting to rate the quality of sites. As you can see it reckons this site is suitable for viewing for all ages

Defining a ratings service

Suppose we want to keep our friends and family away from some of the truly appalling personal home pages on the Web. We could start our own rating service, assign labels to home pages according to our rating system, and deliver them from a label bureau. Then our friends could have the benefit of viewing the Web just as we'd like them to see it (something they're bound to appreciate).

The first thing we need is a specification of the rating service and rating system. There are two ways to do this. We'll do it the hard way, by hand (you'll find the technical documentation at **www.w3.org/TR/REC-PICS-services**). If you're lazy, then the Web Consortium has set up something called the PICS Application Incubator (at **http://krabappel.si.umich.edu/incubator/**) which has a forms-based tool called Lord of the RATS that does the job for you.

Once we've got the system we can start assigning labels, and then we can figure out how to distribute them to browsers.

The rating system

The three criteria we're using to evaluate pages are:

- Design/HTML skills – this will range from crud to cool
- Evident personal taste – this will range from negative to acceptable
- Interest value – this runs from negative to fascinating.

A low value for a site means it's acceptable – so a cool page gets a design rating of 0 while a naff site would get a 3. We can then set the acceptable level of naffness using our browser's controls.

The rating service definition for this system is shown in full in the How to define a RAT file box below. This will be stored on our system as a RAT file. It starts with a number of global definitions – the URL for the rating system points to a document describing the categories, scales and criteria for ratings, and the URL for the rating service should lead to a document indicating who's running the service.

Labels have this second URL embedded and it's used to refer readers to further information. The Web Consortium, in a paper on using PICS well (**www.w3.org/TR/1998/NOTE-PICS-Statement-980601.html**) says "PICS-based systems should facilitate disclosure of the criteria used to rate content", and that "users of PICS-based content selection systems should have easy access to information about the filtering criteria".

Each category (there are three in this example) has a short name, a longer description and a set of named values. The values needn't be expressed as words. Numbers can be used, as we've done in the example, so you could set a threshold value using a slider.

Distributing your ratings

Once it's written to a file, the service specification can be distributed in a number of ways. You could email it to your friends, or put it on a disk. The most common way to distribute RAT files is to put them onto a Web server. You'll need to make sure your server knows how to deal with the MIME type application/pics-service for RAT files, but once that's done interested users can easily get your service description.

After the RAT file has been downloaded, you can add the new system to the Ratings Systems supported by your browser (see p115 in our August issue). Now, all you need are some labelled documents to work with.

Setting up labels

A PICS label contains values for the categories defined by the current rating system. For example, the RSACi rating service rates documents on the four categories of violence, nudity, sex and language. The full specification for a label is complex, but you'll see a simple demo label in the box to the right.

The first line describes what rating system is being used – in the example it's v1.0 of our rating system. You'll find more information on this rating system at the URL listed. The next line describes who rated it, namely Bill Thompson, and the URL it applies to. The For is optional. It's a way for the browser to check the correct label has been delivered.

This next section rates the page – it has a Design rating of 2, a Taste rating of 1 and an Interest rating of 3. The screenshot above shows what

How to define a RAT file

```
(application/pics-service)
((PICS-version 1.1)
(rating-system Òhttp://www.myserver.com/ratingsÓ)
(rating-service Òhttp://www.myserver.com/v1.0Ó)
(icon Òicons/hpj.gifÓ)
(name ÒThe Home Page JudgeÓ)
(description ÔLet us tell you whether those personal
home pages are worth your time and effort to visitÓ)
(category
(transmit-as ÒdesignÓ)
(name ÒDesign/HTMLÓ)
(label (name ÒcrudÓ) (value 3))
(label (name ÒpoorÓ) (value 2))
(label (name ÒokÓ) (value 1))
(label (name ÒcoolÓ) (value 0)) )
(category
(transmit-as ÒtasteÓ)
(name ÒPersonal TasteÓ)
(label (name ÒnegativeÓ) (value 3))
(label (name ÒminimalÓ) (value 2))
(label (name ÒsomeÓ) (value 1))
(label (name ÒacceptableÓ) (value 0)) )
(category
(transmit-as ÒinterestÓ)
(name ÒInterest ValueÓ)
(label (name ÒnegativeÓ) (value 3))
(label (name ÒminimalÓ) (value 2))
(label (name ÒsomeÓ) (value 1))
(label (name ÒfascinatingÓ) (value 0)) ) )
```

How PICS labels should look

```
<meta http-equiv=ÓPICS-LabelÓ
content=Õ(PICS-1.1 Òhttp://www.
myserver.com/ratings/V1.0Ó
by ÒBill ThompsonÓ
labels
for Òhttp://bill/Ó
ratings (design 2 taste 1 interest
3))Õ>
```

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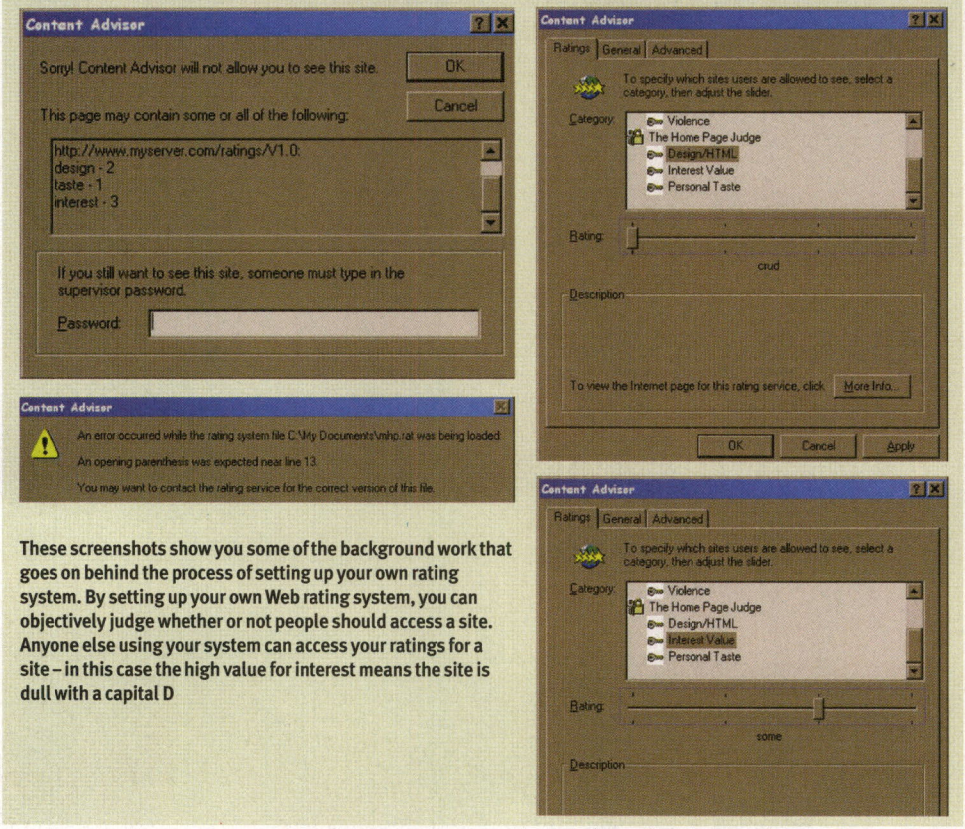
Our new ratings system, Home Page Judge, in action



These screenshots show you some of the background work that goes on behind the process of setting up your own rating system. By setting up your own Web rating system, you can objectively judge whether or not people should access a site. Anyone else using your system can access your ratings for a site – in this case the high value for interest means the site is dull with a capital D

happens when this page is accessed by a 'Home Page Judge-enabled' browser.

Some ratings services give Web site managers tools to generate labels. RSACi (**www.rsac.org**) has a complex online questionnaire you can use, although it's questionable how useful this is. US lawyer Jonathan Weinberg, in an article entitled Rating the Net (**www.msen.com/~weinberg /rating.htm**), points out that "rules have their own problems", and these problems are largely down to bias and inconsistency. He says the wide range of sites that might want to register with RSACi make it impossible to get any real agreement on standards.

Generating labels is certainly one of the major barriers to the widespread adoption of PICS. It takes a lot of work, particularly when pages are constantly changing. And there's no way yet to create labels on the fly for generated pages.

Getting the labels

For our demonstration system, we can trawl the Web looking for home pages to rate – and even define some objective criteria. Personally, people who mention their cats will always rate a 3 for taste.

But even with the labels, we have a problem. Although we can insert them into the HTML for pages under our own control, the main purpose of this service is to rate other people's content. And since we could be telling them their page is poorly designed, uninteresting and tasteless, they probably won't insert our labels.This is one of the reasons why letting third parties assign labels to other people's content is a key requirement of any workable rating system.

The PICS approach is based on the idea of a label bureau. This is a special server that keeps a collection of labels and their URLs and provides them to browsers on demand. At the moment, however, the options for those wanting to set up a label bureau are rather limited. There are third party label bureaux supporting their own rating services, such as NetShepherd (**www.netshepherd.com**), which currently supplies labels only to its own NetShepherd browser, although it plans to support IE and Navigator later in 1998.

The EvaluWeb is an experimental label bureau – you'll find the label server at **http://calvin.ptloma.edu/~spectre /evaluweb**. It sorts documents into simple categories such as General viewing, Parental advisory and Explicit content. One of the neat things about this site is it lets you enter the URL of your own site and rate it there and then – the rating is held on the EvaluWeb site and provided on demand to users of their bureau. This is far simpler than generating a label and then incorporating it into your HTML.

Your own ratings server

Setting up your own server is simple, but takes a lot of administration. If you don't want to write your own Perl scripts to do this, the simplest option is to go for the Web Consortium's Jigsaw server. Jigsaw is the W3C's sample HTTP server, written entirely in Java and available (version 2.0 beta 1) from the W3C Web site. If you've installed Jigsaw (it runs on any Java-capable machine) then you can get the Jigsaw Label Bureau from **www.w3.org/PICS/refcode**. You can use a database management system that your Java application can talk to using JDBC (Java Database Connectivity), but it's also possible to use the file system to store your label files.

Once you've designed and implemented your rating service, distributed your RAT file to everyone and set up a working label bureau. You then have to carry on assessing and labelling pages around the Web. And you have to keep track of changes to all the URLs stored in your label database – good luck! im

Blocking software

Although it's been criticised as censorware, PICS was designed to give Net users choice over what they see online. Sites are rated by the publishers and then, depending on your PICS rating, you will or won't be able to view rated sites.

The alternative approach is to use blocking software. These programs monitor Net traffic, using specifications set by yourself or your network administrator, and stop your browser from accessing forbidden sites. Blocking software such as CYBERSitter (**www.solidoak.com**), Cyber Patrol (**www.cyberpatrol.com**) and Net Nanny (**www.netnanny.com**) is available online.

Some of the blocking software (such as SurfWatch at **www.surfwatch.com**) uses PICS labels to rate sites – the labels are distributed both over the Net (from a label bureau) or on disk.

Coming up...

We'll be following up this series with...

- **Who are you?** authentication, digital signatures and keyrings
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- **Why do you want to know?** privacy policies on the Internet.

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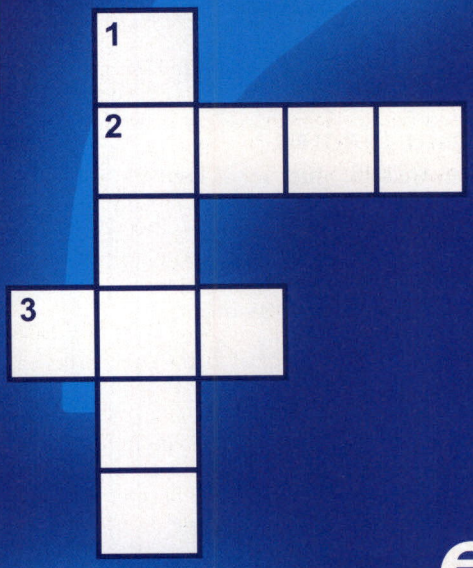

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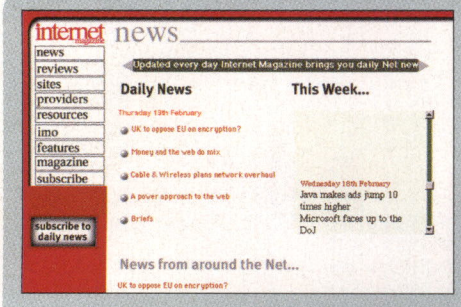

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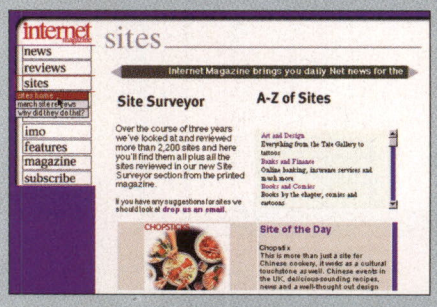

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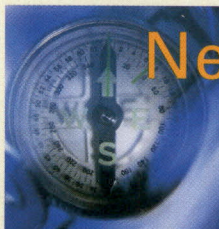

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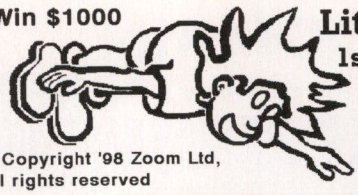

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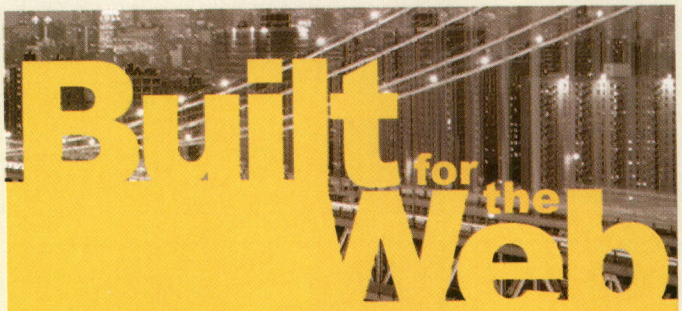

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provider la

The *Internet Magazine* ISP Lab tests put UK's top service providers through a rigorous set of performance tests. Find out how your provider scored in our exclusive tests. Turn to page 136 to find out which ISP wins our award for most consistent performance over the last six months

Choosing an ISP is a tricky business. One of the few areas of differentiation is performance. So, every month, *Internet Magazine* tests the performance of over 100 service providers. We check their availability by tracking the busy tones we get when we try to connect. Once we're connected, we test Web speeds by timing how quickly we can download four Web pages.

These tests are run repeatedly over a period of about three weeks every month. This means we get a good indication of the ISPs' performance over the test period.

As well as the tests we do every month, we also produce another set of ratings – the six month tests. These are produced from the last six months of test data, and they give a good indication of a service provider's performance over an extended period of time (see page 136 for more details).

And the winner is...

The winner of this month's coveted ISP of the Month award is Cable Internet. This first place position comes after several months of good results, including 29th place last month, and 11th place in our July rankings.

The company seems to have sorted out the availability problems it was having last month. Its availability figure of 86.21 per cent was particularly low in the August issue, but this month the figure rose to an impressive 99.2 per cent.

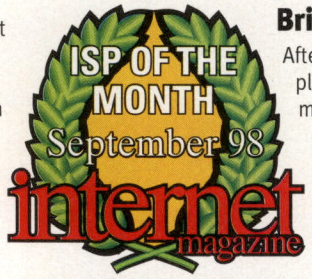
"We've just recently completed our national network, so we're carrying a lot more of our traffic ourselves," says Steven Powers of TeleWest, the parent company of Cable Internet.

"We own all our own fibre, and this has saved us a lot of money on interconnect charges and the like. Because it's all our own network, it also makes the whole thing a lot more reliable."

Coming a close second in our ratings is NetDirect, the company which came top in the tests in our April issue, but was languishing in 61st place in last month's tests.

A slightly slower average Web speed than Cable Internet's kept NetDirect off the top spot, despite having achieved a 100 per cent availability rating – indicating that every call we made to them got through first time. "We've been adding lines," says Russell Heilling, technical manager at NetDirect. "We're working to make sure our incoming phone line capacity is always 10 per cent above peak usage, so we've always got some spare. We've also just added another connection to LONAP (that's London Access Point, an alternative to LINX, at **www.lonap.org.uk**) and we've got peering with about 10 other ISPs through this."

Other strong performers this month include ProWeb (which climbs to fifth place from last month's 10th position) and Pinnacle Internet, which has made an impressive jump up to sixth place from 26th last month.



Cable Internet

Brickbats

After a spectacular first place showing last month, Wave Rider Internet has dropped down to a rather poor 95th position. Its availability figure remains excellent at 100 per cent, but was let down by poor Web access speeds. The company seemed to have the most difficulty accessing the UCL site, hosted in the UK on the JANET network.

Cable & Wireless Internet also plummeted down the tablesfrom 11th to 97th place – a low availability figure combined with average Web speeds to send it down our ratings. However, this hasn't stopped the company from winning the contract to supply all of AOL's infrastructure in the UK.

Changes this month

The big change in the tests this month is the number we use to connect to ISPs. We've shifted as many of them as possible to their 0845, 0345 or 0645 dial-up numbers.

Errors and problems

We've had problems testing FirstNet this month – they changed telecoms providers, but we couldn't update the tests in time. So they aren't in this month's tests, but will be back next issue. Force 9 has asked us to point out a problem over the past few months – we've been dialling an old phone number. "It appears that we've been tested on our old service which we phased out, but retained as part of our back-up policy," says Lee Strafford, MD of Force 9. "These lines represent access to less than five per cent of our service, and only has access to a restricted amount of bandwidth." We're now using Force 9's new 0845 phone number.

The only ISP tests that count

The *Internet Magazine* ISP tests are based on proven scientific testing principles. We don't ask other people to do our testing – it's all done in-house under the close scrutiny of our team of experts. We ensure that we connect to each ISP many times – this month, for example, we made over 11,000 phone calls– an average of 113 connections to each ISP.

The results produced by this extensive testing procedure are then processed through a series of databases and spreadsheets to produce the results you see here. At every stage of the process, the results are checked and audited to make sure the results are accurate.

Although our tests provide a comprehensive overview of ISPs' performance, there are a few points you should bear in mind when using them to decide which ISP to choose. Our tests are designed to test the quality and speed of the infrastructure of the ISP – we don't test their software, technical support or pricing. We tested these factors in our ISP of the year feature in the December issue (you can get hold of this article from our Faxback service on page 117).

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This month's best-performing ISPs, as tested in *Internet Magazine*'s labs

This month	Last month	Provider	Telephone	Availability (in per cent)	Average Web speed (secs)	UCL Average speed (secs)	Russian Pepsi Average speed (secs)	Oracle Average speed (secs)	Italian Yahoo Average speed (secs)
1	29	Cable Internet	(0500) 541542	99.22	5.50	2.36	9.23	5.93	4.48
2	61	NetDirect Internet	(0800) 731 3311	100.00	5.92	3.65	9.15	6.20	4.68
3	21	DIALnet	(0800) 881 881	95.73	5.70	2.71	9.78	5.53	4.78
4	2	Technocom	(01753) 714 200	94.89	5.74	2.67	9.21	5.89	5.20
5	10	ProWeb	(0500) 636 343	94.92	5.84	2.61	10.14	5.97	4.63
6	26	Pinnacle Internet	(01293) 613 686	98.48	6.07	2.74	10.50	6.56	4.48
7	46	Total Connectivity Providers	(01703) 571 300	100.00	6.22	2.66	10.60	6.64	4.99
8	30	Sonnet Internet	(0171) 891 2000	98.48	6.23	2.38	10.20	6.87	5.47
9	63	Primex	(01908) 643 597	99.24	6.30	2.46	11.44	6.59	4.72
10	74	U-Net	(01925) 484 444	100.00	6.40	3.08	9.74	6.67	6.11
11	4	UUNET (Pipex Dial)	(0500) 567 000	99.24	6.37	3.78	10.52	6.59	4.58
12	28	Nildram	(0800) 072 0460	98.25	6.32	2.54	11.05	7.03	4.68
13	90	Power Internet	(01908) 605 188	94.92	6.14	3.21	9.24	7.06	5.07
14	25	Thrust World	(0800) 980 5454	99.22	6.45	2.41	10.06	7.27	6.08
15	48	Direct Connection	(0800) 072 0000	98.26	6.41	4.43	9.51	6.76	4.95
16	3	Freedom to Surf	(0181) 881 2111	100.00	6.66	5.57	8.98	7.71	4.36
17	12	SoftProg NET	(0181) 788 0656	98.47	6.60	4.75	9.89	6.88	4.89
18	27	Avel Internet	(01237) 425100	100.00	6.81	3.03	11.63	7.37	5.23
19	36	CompuServe	(0990) 000 200	90.00	6.13	2.67	11.00	5.93	4.93
20	55	Onyx Internet	(0345) 715 715	97.71	6.67	3.27	10.65	7.51	5.26
21	79	Intonet	(0181) 941 9195	100.00	6.84	3.90	11.08	7.20	5.18
22	22	Internet Central	(01270) 611 000	99.22	6.79	4.83	10.69	6.48	5.18
23	23	WyeNet	(01989) 762 476	99.23	6.82	4.78	10.68	6.16	5.66
24	16	AAP Internet	(0181) 427 1166	99.22	6.86	3.20	11.92	6.02	6.30
25	31	SAQ Network Services	(0800) 801 514	97.74	6.78	2.45	10.38	6.98	7.33
26	N/A	Success In Motion	(0800) 0745 547	96.67	6.76	2.94	10.98	7.28	5.83
27	43	Cerbernet	(0171) 360 8000	98.26	6.87	3.39	12.10	6.72	5.26
28	35	WebLeicester	(0116) 223 0070	97.39	6.86	4.05	11.25	7.01	5.13
29	49	Inter@lpha	(01703) 363 200	94.95	6.72	2.72	11.55	6.53	6.08
30	40	CableNet	(01424) 830 700	96.58	6.84	2.93	12.46	7.30	4.67
31	8	REDNET	(01494) 511 640	100.00	7.10	8.52	8.75	6.26	4.86
32	97	TriNET	(01539) 731 000	98.26	7.04	3.64	10.67	8.02	5.82
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38	17	NewNet	(07000) 639 638	99.12	7.35	2.92	12.86	8.07	5.53
39	66	Netcom Internet	(0800) 980 9107	98.26	7.30	5.96	11.10	6.91	5.22
40	64	London Web Communications	(0800) 026 8306	100.00	7.46	3.09	13.42	7.06	6.28
41	33	Netkonect	(0171) 345 7777	92.09	6.88	3.94	12.02	5.83	5.75
42	59	Web Plus	(0345) 932 758	100.00	7.50	3.14	10.94	10.52	5.40
43	9	CIX	(0181) 255 5151	96.18	7.28	9.19	9.18	6.28	4.45
44	78	LineOne	(0345) 777 464	97.89	7.41	4.11	11.56	9.35	4.63
45	50	Madhouse Net	(0800) 074 8283	98.25	7.45	5.00	9.95	9.37	5.50
46	65	EntWeb	(0800) 525 470	96.99	7.39	4.72	12.03	7.21	5.58
47	24	Mistral Internet	(01273) 747 432	95.56	7.35	2.96	12.43	7.88	6.12
48	57	UK2NET	(0171) 538 0253	100.00	7.93	4.61	12.55	8.66	5.91
49	18	WSS Internet Access	(01793) 420 764	96.55	7.75	4.76	12.32	7.39	6.53
50	53	VossNet	(01753) 737 800	100.00	8.08	2.82	15.88	7.45	6.18
51	19	Telinco Internet Services	(0800) 542 0800	96.58	7.85	5.33	12.53	6.91	6.61
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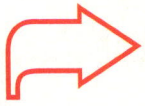

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This month's best-performing ISPs, as tested in *Internet Magazine*'s labs

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54	62	Global Internet	(0870) 909 8041	94.81	7.83	2.66	15.31	8.41	4.91
55	69	AngliaNet	(01473) 211 922	92.03	7.69	4.29	12.94	7.25	6.25
56	86	NTL Internet	(0800) 607 608	100.00	8.36	2.99	12.79	7.69	9.96
57	76	WorldWide Web Services Ltd	(01784) 898 800	96.58	8.16	3.68	14.64	8.80	5.54
58	92	BT Internet	(0800) 800 001	96.67	8.26	5.72	14.95	7.55	4.83
59	87	Legend Internet	(01274) 743 500	100.00	8.60	2.68	15.58	8.26	7.89
60	82	Maidenet	(01628) 825 757	100.00	8.63	8.31	12.06	8.57	5.57
61	51	Internet UK	(01827) 711 722	99.12	8.80	6.41	13.35	8.63	6.80
62	99	Internet Discovery	(0181) 694 2240	99.22	8.81	6.28	12.99	9.31	6.65
63	77	CYBERphile Internet	(01543) 454 840	100.00	8.89	5.11	14.37	8.80	7.28
64	67	Eclipse Networking	(01392) 202 345	94.59	8.46	4.60	15.00	7.37	6.85
65	68	Pipemedia OnLine	(01455) 828 218	96.23	8.65	5.61	15.61	6.78	6.61
66	85	Baynet	(01222) 256 401	98.41	8.89	3.47	13.19	7.92	10.98
67	101	Pavilion Internet	(01273) 607 072	100.00	9.07	2.93	12.61	13.02	7.73
68	103	Easynet	(0541) 594 321	100.00	9.09	3.78	13.17	13.51	5.92
69	52	MetroNet	(0800) 074 1881	93.75	8.72	3.63	15.31	9.10	6.83
70	N/A	WinNET	(0181) 930 6688	95.16	8.99	2.33	17.22	8.34	8.07
71	14	FreeDotNet	(0181) 636 7100	91.60	8.67	6.00	12.19	7.46	9.03
72	81	Which? Online	(0645) 830 240	99.12	9.42	3.01	14.12	7.62	12.95
73	90	Power Internet	(01908) 605 188	92.81	8.87	4.72	14.25	9.24	7.25
74	84	1st Solution	(01344) 752 444	100.00	9.57	6.39	15.28	8.89	7.71
75	93	Force 9	(0800) 073 7800	100.00	9.67	6.83	10.44	16.57	4.84
76	80	The Internet Business	(01232) 424 190	82.84	8.06	5.95	12.17	8.55	5.57
77	6	ENTANET	(0500) 368 263	100.00	9.87	13.36	10.59	7.95	7.57
78	60	Thames Global Internet Services	(01344) 641 627	95.49	9.44	3.90	16.06	8.72	9.08
79	38	Prestel Online	(0990) 223 300	97.74	9.75	5.72	14.02	9.74	9.51
80	83	Virgin Net	(0500) 558 800	95.00	9.72	3.77	13.68	8.89	12.54
81	39	Newbury Internet	(01635) 569 123	100.00	10.46	8.84	14.41	11.61	6.96
82	71	Aviators Network	(01727) 868 468	97.41	10.43	5.49	17.54	10.24	8.43
83	15	Demon Internet	(0181) 371 1234	94.07	10.21	5.53	17.96	8.74	8.63
84	102	Surflink	(0181) 903 2777	99.11	10.80	5.94	17.05	11.80	8.41
85	7	I-Way	(0171) 734 5734	97.69	10.97	11.48	15.44	9.83	7.14
86	42	CommUnity Internet	(01865) 856 000	100.00	11.23	14.02	16.63	7.50	6.79
87	88	INTERact	(01753) 776 699	86.92	9.83	7.60	15.35	8.94	7.42
88	5	AIC-ENTANET	(01279) 865 290	100.00	11.35	13.75	12.22	8.40	11.01
89	54	Computalynx	(01604) 231 437	65.52	7.43	3.05	13.16	7.26	6.26
90	73	Enterprise	(01624) 677 666	91.79	10.48	8.14	17.26	10.61	5.93
91	91	Direct Net @ccess	(01232) 201 555	92.70	10.72	4.21	15.70	7.55	15.40
92	N/A	Frontier Internet Services	(0171) 536 9090	100.00	11.63	9.86	19.36	11.58	5.71
93	45	Abel Internet	(0345) 576 015	93.43	11.40	3.62	19.84	11.50	10.61
94	47	Kencomp Internet	(01539) 722 559	85.95	11.02	6.50	16.71	9.84	11.05
95	1	Wave Rider Internet	(0121) 603 3888	100.00	12.98	22.76	11.90	9.18	8.06
96	58	Zoo Internet	(0345) 326 326	87.20	11.55	14.05	18.95	8.25	4.97
97	11	Cable & Wireless Internet	(0500) 200 980	90.32	12.17	12.48	14.55	9.32	12.35
98	94	Wavenet	(01253) 794 386	96.58	13.53	11.44	19.80	11.97	10.92
99	37	Intensive Networks	(01672) 511 054	98.25	14.00	12.30	17.94	8.79	16.97
100	70	Northants Computer Centre	(01604) 622539	94.12	14.56	15.42	18.75	11.36	12.73
101	75	Poptel	(0171) 923 9465	61.00	10.18	4.51	17.24	10.59	8.40
102	96	Newgate Communications	(0121) 327 6633	77.71	13.07	3.04	26.50	17.53	5.20
103	104	UK Online	(01749) 333 333	45.65	9.66	3.09	16.12	13.77	5.66

How the performance tests work

The *Internet Magazine* provider Lab tests are designed to give you information on the speed and availability of Internet Service Providers (ISPs). Our system repeatedly checks:

- The availability of the ISPs. How easy is it to make the connection? How often are all their modems engaged?
- The speed of the connection. How long do a number of popular Web pages take to download?

The Web pages we use for the speed tests change every month. This month we're hitting the following sites: **www.ucl.ac.uk/UCL-Info/Contacts/, www.pepsi.ru/ch4.html, http://orasearch.oracle.com/** and **www.yahoo.it/docs/info/aiuto.html**. We're testing the Russian version of the Pepsi site, the UCL university page which sits in the UK on the JANET network, the Italian Yahoo page and a page from the Oracle site in the US. These pages give a good idea of the general speed of Web access through the ISP's network and their international bandwidth. We run these tests repeatedly, 24 hours a day. The results are then processed down to give the average figures shown above.

To rank the ISPs, we calculate the geometric mean of the availability and their average Web performance. This figure is then used to rank the ISPs in order of overall performance. These two results are given equal weighting, so a provider with a below average availability but an above average Web speed could come higher than one with 100 per cent availability but slower Web access. The tests for this month ran from 5-23 July, 1998.

How the ISPs performed over the last six months

Find out how your service provider has done in our unique chart...

	Provider	Phone	URL
1	Technocom	(01753) 714 200	www.technocom.net
2	Freedom to Surf	(0181) 881 2111	www.freedom2surf.net
3	UUNET (Pipex Dial)	(0500) 567 000	www.uk.uu.net
4	SAQ Network Services	(0800) 801 514	www.saqnet.co.uk
5	Cable Internet	(0500) 500 100	www.cableinet.co.uk
6	Thrust World	(0800) 980 5454	www.thrustworld.co.uk
7	ProWeb	(0500) 636 343	www.proweb.co.uk
8	REDNET	(01494) 511 640	www.red.net
9	CIX	(0181) 255 5151	www.cix.co.uk
10	Nildram	(0800) 072 0460	www.nildram.net
11	Internet Central	(01270) 611 000	www.netcentral.co.uk
12	Primex	(01908) 643 597	www.primex.co.uk
13	Sonnet Internet	(0171) 891 2000	www.sonnet.co.uk
14	WyeNet	01989 762 476	www.wyenet.co.uk
15	NetDirect Internet	(0800) 731 3311	www.netdirect.net.uk
16	CommUnity Internet	(01865) 856 000	www.community.net.uk
17	Wave Rider Internet	(0121) 603 3888	www.waverider.co.uk
18	Hiway	(01635) 573 300	www.hiway.co.uk
19	I-Way	(0171) 734 5734	www.i-way.co.uk
20	Pinnacle Internet	(01293) 613 686	www.pncl.co.uk
21	CableNet	(01424) 830 700	www.cablenet.net/cablenet
22	Moonlight Internet Services	(01276) 856 868	www.moon-light.co.uk
23	Onyx Internet	(0345) 715 715	www.onyxnet.co.uk
24	MetroNet	(0800) 074 1881	www.metronet.co.uk
25	WSS Internet Access	(01793) 420 764	www.WSkiSoft.co.uk
26	Maidenet	(01628) 825 757	www.maidenet.co.uk
27	CompuServe	(0990) 000 200	www.compuserve.co.uk
28	Direct Connection	(0800) 072 0000	www.dircon.net
29	SoftProg NET	(0181) 788 0656	www.softprog.net
30	NewNet	(07000) 639 638	www.newnet.co.uk/home
31	Demon Internet	(0181) 371 1234	www.demon.net
32	Pipemedia OnLine	(01455) 828 218	www.pipemedia.co.uk
33	Mistral Internet	(01273) 747 432	www.mistral.co.uk
34	Total Connectivity Providers	(01703) 571 300	www.tcp.co.uk
35	Intonet	(0181) 941 9195	www.intonet.co.uk
36	Madhouse Net	(0800) 074 8283	www.madhouse.uk.com
37	VossNet	(01753) 737 800	www.vossnet.co.uk
38	Netcom Internet	(0800) 980 9107	www.netcom.net.uk
39	Eclipse Networking	01392 202 345	www.eclipse.co.uk
40	Netkonect	(0171) 345 7777	www.netkonect.nco.uk
41	Inter@lpha	(01703) 363 200	www.interalpha.net
42	Global Internet	(0870) 909 8041	www.global.net.uk
43	Internet for Business	(01224) 333 300	www.wintermute.co.uk
44	Thames Global Internet Services	(01344) 641 627	www.tgis.co.uk
45	U-Net	(01925) 484 444	www.u-net.net
46	Cerbernet	(0171) 360 8000	www.cerbernet.net
47	Prestel Online	(0990) 223 300	www.prestel.co.uk
48	Web Plus	(0345) 932 758	www.webplus.co.uk
49	The Internet Business	(01232) 424 190	www.tibus.net
50	Telinco Internet Services	(0800) 542 0800	www.telinco.net
51	BT Internet	(0800) 800 001	www.btinternet.com
52	Abel Internet	(0345) 576 015	www.abel.net.uk
53	LineOne	(0345) 777 464	www.LineOne.net
54	AAP Internet	(0181) 427 1166	www.aapi.co.uk
55	Andover On-line	(01264) 334 822	www.andover.co.uk
56	Newbury Internet	(01635) 569 123	www.newbury.net
57	Power Internet	(01908) 605 188	www.powernet.co.uk
58	Enterprise	(01624) 677 666	www.enterprise.net
59	Direct Net @ccess	(01232) 201 555	www.d-n-a.net
60	FreeDotNet	(0181) 568 3377	www.thefree.net
61	AngliaNet	(01473) 211 922	www.anglianet.co.uk/anglianet
62	CYBERphile Internet	(01543) 454 840	www.cyberphile.co.uk
63	Northants Computer Centre	(01604) 622539	www.nccnet.co.uk
64	Aviators Network	(01727) 868 468	www.avnet.co.uk
65	Cable & Wireless Internet	(0500) 200 980	www.cwcom.net
66	1st Solution	(01344) 752 444	www.1st-solution.net
67	London Web Communications	(0800) 026 8306	www.londonweb.net
68	Legend Internet	(01274) 743 500	www.legend.co.uk
69	ClaraNET	(0800) 358 2828	www.clara.net
70	Paradise Internet Network Services	(01256) 414 863	www.pins.co.uk
71	Datanet	(01252) 810 081	www.data.net.uk
72	Which? Online	(0645) 830 240	www.which.net
73	NTL Internet	(0800) 607 608	www.ntli.com
74	TriNET	(01539) 731 000	www.trinetimb.com
75	Poptel	(0171) 923 9465	www.poptel.org.uk
76	Virgin Net	(0500) 558 800	www.virgin.net
77	Internet Discovery	(0181) 694 2240	www.idiscover.co.uk
78	Avel Internet	(01237) 425100	www.avel.co.uk
79	Pavilion Internet	(01273) 607 072	www.pavilion.co.uk
80	PowerNet	(0500) 011501	www.powernet-int.co.uk
81	Baynet	(01222) 256 401	www.baynet.co.uk
82	Easynet	(0541) 594 321	www.easynet.co.uk
83	Kencomp Internet	(01539) 722 559	www.kencomp.net
84	Zoo Internet	(0345) 326 326	www.zoo.co.uk
85	Surflink	(0181) 903 2777	www.surflink.co.uk
86	INTERact	(01753) 776 699	www.interact.net.uk
87	Internet UK	(01827) 711 722	www.zipmail.co.uk
88	UK Online	(01749) 333 333	www.ukonline.co.uk

Top performers in the past six months

As well as our normal tests, every month we produce a table showing how the ISPs have performed over the past six months. We're all after consistency in our service provider's performance, so it's important to check out these figures before you choose an ISP.

We take six months' worth of data for availability and Web access speed and produce an overall average for both sets of figures. These averages are then used to calculate an overall rating for the ISPs. From this we then work out the relative positions of the service providers.

The table only includes service providers that have been in our tests for the past six months. Because of the problems we were having accessing Force 9's service, the company isn't listed in our six-monthly results.

This month's results

This month, 87 providers made it into our six-monthly tables. There's very little change at the top of the chart. Once again, Technocom holds onto its first place, with Freedom To Surf and UUNet also holding on to their second and third positions. While SAQ Network Services crawl up from fifth to fourth position.

Unsurprisingly (given this month's first place), Cable Internet climbs up the table from 13th to fifth place. Meanwhile, REDNET drops down to eighth place and Thrust World (which uses the SAQ Net backbone) drops down to sixth position.

Meanwhile, BT Internet continues to languish in the middle of the six-month chart following a string of recent poor results. The telco just manages to inch ahead of LineOne ,which also uses the BT backbone.

However, it's worth remembering there's relatively little to separate the top 10 service providers– all have gained their top positions by providing a consistently good performance over the past six months.

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pick a prov

The most up to date information is vital when you're choosing from the hundreds of Internet service providers. You'll find no better guide than our Pick a Provider section over the following five pages

They're all heart

Demon Internet is giving subscribers three months' free subscription to the content provider LineOne. After your free time is up, you can subscibe to Lineone at the cut-price of £3.20 per month. Demon's also increased its freeWeb space to 15Mb for dial-up users and beefed up access for online gamers.
www.demon.net
www.LineOne.net

On your doormat soon

AOL is in final testing stages of version 4.0 of its client software. The US audience will try out the new software first, but UK users can expect the software to drop through letterboxes in August.
www.aol.co.uk

Beaucoup d'argent

The Colt Telecom Group has dipped into its wallet to snap up France's largest independent ISP, ImagiNet, in a deal worth around £13 million.
www.colt-telecom.co.uk/

Joining the ISP gang

New ISP CheapNet is pretty cheap, as you'd expect. £58.75 for a year's connection. You'll have to fork out the cash up front, but it does throw in a colossal 50Mb of Web space.
www.cheapnet.co.uk

Gemsoft is a Sheffield based dial-up provider which takes its backbone from Wisper and charges £12.99 per month. You have to pay a £12.99 start up fee,but the company boasts a user to modem ratio of 3:1.
www.gemsoft.net

This month sees two new tenner-a-month ISPs battling it out – Woden Network Systems which includes VAT in its charges, and Chertsey Communications which doesn't.
www.woden.com
www.chertsey.co.uk

And here are some providers for businesses only. Sardius will flog you an ISDN or leased line connection, while Zereau provides leased lines Europe-wide.
www.sardius.net
www.zereau.com

CAPITAL LETTER CRAZE

It seems some providers have taken to SHOUTING get attention. IPF.NET is a business provider offering leased line and ISDN connections.
www.ipf.net.uk

PORTHILL.COM is going for the cheap and cheerful market. Sign up for a year for £3.99 a month. Meanwhile, SIMNET is charging £9.40 a month.
www.porthill.com
www.simnet.co.uk

In brief

MetroNet now lets you register a domain name for under a tenner in the format www.yourname.inuk.com
www.metronet.co.uk

Cable Internet's freecall sales number has changed from (0500) 541542 to (0500) 500 100.
www.cableinet.co.uk

Mistral Internet has changed backbone provider. Out goes BTnet and in comes Wisper. CommUnity Internet has added Wisper to VBCnet.
www.mistral.co.uk
www.community.net.uk

Technocom is now with E-Bone and routes data direct to Europe.
www.technocom.net

If you've got any ISP news email us at **providers@internet.emap.com**

How to choose an ISP

It's crucial to choose a service provider that gives you local call access to the Net. Most ISPs let you connect from anywhere on the mainland UK for the price of a local phone call. They use systems run by companies such as BT, Energis and Mercury, where the phone number starts 0345, 0645 or 0845.

The next step is to look at how the providers charge for their services. Most ISPs charge a flat fee for unlimited use of the Net. They assume the cost of the phone call will stop you staying online for too long. Some companies (such as AOL, MSN and CompuServe, which also provide their own content) charge for the time you're online. They have options that give you three hours or five hours online, for example. Once you exceed this figure you're charged at an hourly rate. This might be a cheaper option if you only use the Net occasionally, but it's easy to spend longer online than you think, so make sure the charges don't rack up. It's also possible to get a cut-price email-only account from companies such as FreeDotNet.

Out into the big wide Internet

Another crucial consideration is your ISP's connection to the rest of the Internet. If its connections are small and clogged, you can expect slow Web access, email that takes a long time to be delivered and many other problems. We run regular tests of service providers to find the fastest. See page 132 for more details.

Supporting the customer

Technical support is a vital part of the service. We've added the hours support is available to our listings. Make sure you can get support during the times you're actually going to be using the service. And don't be afraid to ask for the technical support number before you sign up and give it a ring, armed with a tricky question you've prepared earlier.

You should also check that your service provider is a member of the ISPA (Internet Service Providers Association). The ISPA was set up to establish a code of practice for service providers. Among other factors, the code encourages self-regulation for ISPs. What's more if you have a complaint about your service provider you can always take it to the ISPA. **www.ispa.org.uk**

- Once you've signed up, you can test your email account by sending an email to **newuser@internet.emap.com**

Forget the virtual world, let real people in real offices guide you through cyberspace.
Whether you're already connected to the Net or wondering how to make it work for you, call the
i-way helpline 0118 958 0058
For online help, email info@i-way.net.uk or visit www.i-way.co.uk
Soho 0171 734 5734 West London 0181 758 0058 Oxford 01865 200788 Swindon 01666 860100
i-way

vider

The most comprehensive listing of UK Internet service providers

Name	Phone	Email	Web page	Technical support	Cost (pm)	Backbone
Online Service Providers (you have to pay for content)						
AOL	(0800) 279 1234	queryuk@aol.com	www.aol.co.uk	7.45-10.30 Mon-Fri / 9.00-17.30 Sat	from £4.95	AOL
CompuServe	(0990) 000 200	customerservice@compuserve.co.uk	www.compuserve.co.uk	8.00-midnight every day	from £6.50	CompuServe
LineOne	(0345) 777 464	enquiries@LineOne.net	www.LineOne.net	8.00-22.00 Mon-Sat / 10.00-22.00 Sun	from £9.95	BTnet
MSN	(0345) 002 000	ukweb@microsoft-contact.co.uk	www.uk.msn.com	24 hours a day	from £4.95	UUNET
Which? On-line	(0645) 830 240	support@which.net	www.which.net	24 hours a day	£14.75	NTL Internet
Business providers (those that provide leased line and ISDN access only)						
1st Solution Internet	(01344) 752 444	sales@1st-solution.net	www.1st-solution.net	9.00-18.30 Mon-Fri	ISDN / LLO	GX Networks
ACE	(01670) 528 204	info@ace.co.uk	www.ace.co.uk	9.00-17.00 Mon-Fri	ISDN / LLO	Planet
Apple Centre Warrington	(01925) 444 499	sales@applecentre.com	www.applecentre.com	9.00-17.30 Mon-Fri	ISDN / LLO	Wisper
BTnet	(0345) 585 100	sales@bt.net	www.bt.net	24 hours a day	ISDN / LLO	BTnet
BusinessNet	(0171) 390 9933	sales@business.net.uk	www.business.net.uk	24 hours a day	ISDN / LLO	BusinessNet
Cerbernet	(0171) 360 8000	sales@cerbernet. net	www.cerbernet.net	9.00-18.00 Mon-Fri / pager Sat-Sun	ISDN / LLO	Wisper
COLT	(0171) 390 9099	info@colt.net	www.colt.net	24 hours a day	LLO	COLT Internet
CommUnity Internet	(01865) 856 000	info@community.net.uk	www.community.net.uk	9.00-18.00 Mon-Fri	ISDN / LLO	VBCnet / Wisper
Data Link Internet	(01522) 681 100	sales@data-link.net	www.data-link.net	9.00-17.00 Mon-Fri	ISDN / LLO	BTnet
Dial Internet	(01372) 456 000	sales@dialin.co.uk	www.dialin.co.uk	8.30-18.30 Mon-Fri	ISDN / LLO	BTnet
DIALnet Connect	(0800) 881 881	sales@dialnet.com	www.dialnet.com	24 hours a day	ISDN / LLO	Cable Internet / Wisper
ElectricMail	(01223) 501 333	info@elmail.co.uk	www.elmail.co.uk	9.00-17.00 Mon-Fri	ISDN / LLO	GX Networks
Epinet	(01242) 821 000	info@epinet.co.uk	www.epinet.co.uk	9.00-17.00 Mon-Fri	ISDN / LLO	GX Networks / Energis
Genesis Project	(01232) 572 000	sales@gpl.net	www.gpl.net	9.00-20.00 every day	ISDN / LLO	NTL Internet
GX Networks	(0181) 957 1250	sales@gxn.net	www.gxn.net	9.00-18.00 Mon-Fri (24 hr line)	LLO	GX Networks
I-Way Soho	(0171) 734 5734	sales@i-way.net.uk	www.i-way.co.uk	8.00-18.30 Mon-Fri	ISDN / LLO	VBCnet / UUNET / PSInet
ICM NetServ	(0800) 614 581	sales@netserv.net	www.netserv.net	9.00-17.30 Mon-Fri	ISDN / LLO	Wisper / BTnet
Impact Web Publishing	(01628) 522 099	nikki@impactwp.com	www.impactwp.com	9.00-18.00 Mon-Fri	LLO	GX Networks
Internet Central	(01270) 611 000	sales@netcentral.co.uk	www.netcentral.co.uk	9.00-18.00 Mon-Sat	ISDN / LLO	Cable Internet / ISPC
Internet for Business	(01224) 333 300	info@wintermute.co.uk	www.wintermute.co.uk	9.00-18.00 Mon-Fri	ISDN / LLO	Wisper
Internet Network Services	(0181) 239 5000	info@insnet.net	www.insnet.net	24 hours a day	ISDN / LLO	Internet Network Services
Internet Solutions for Business	(0800) 731 8460	sales@is4b.net	www.business-solutions.net	24 hours a day	ISDN / LLO	BTnet / PSInet
IPF.NET	(0171) 213 9666	enquiries@ipf.net.uk	www.ipf.net.uk	9.00am-18.00 Mon-Fri	ISDN / LLO	IPF.NET
iQ Internet	(01273) 327 088	sales@iql.co.uk	www.iql.co.uk	9.00-17.30 Mon-Fri	ISDN / LLO	Planet
ISPC	(01628) 639 595	barryr@ispc.net	www.ispc.net	9.00-17.00 Mon-Fri	ISDN / LLO	Cable Internet / ISPC
Mannet	(01624) 623 841	postmaster@mcb.net	www.mcb.net	9.00-17.30 Mon-Fri	ISDN / LLO	BTnet
Mitoo	(0171) 209 1515	sales@mitoo.co.uk	www.mitoo.co.uk	9.00-17.30 Mon-Fri	ISDN / LLO	BTnet
NACAMAR	(01438) 715 100	info@nacamar.net uk	www.nacamar.co.uk	24 hours a day	LLO	NACAMAR
NetForce Group	(01245) 257 788	sales@netforce.net	www.netforce.net	9.00-17.00 Mon-Fri	ISDN / LLO	Wisper / BTnet
Nettec	(0171) 514 9500	info@nettec.co.uk	www.nettec.co.uk	9.00-17.00 Mon-Fri	ISDN / LLO	GX Networks
NORWEB.net	(0800) 195 0196	sales@norwebcomms.com	www.norwebcomms.com	24 hours a day	ISDN / LLO	The Web Factory
NTL Internet / ENABLIS	(0800) 607 608	sales@ntli.com	www.ntli.com	24 hours a day	ISDN / LLO	NTL Internet
Planet Online	(0113) 234 5566	info@theplanet.uk	www.theplanet.net	24 hours a day	ISDN / LLO	Planet Online
PlusNet Technologies	(0800) 073 7370	sales@plus.net.uk	www.plus.net.uk	24 hours a day	ISDN / LLO	PlusNet
Quza	(0800) 528 0000	info@quza.com	www.quza.com	24 hours a day	ISDN / LLO	Quza
REDNET	(01494) 511 640	info@red.net	www.red.net	9.00-17.30 Mon-Fri	ISDN / LLO	INS
Relay Business Systems	(0345) 369 999	enquiries@relay.co.uk	www.relay.co.uk	24 hours a day	ISDN / LLO	BTnet
Sardius	(01242) 521 133	info@sardius.com	www.sardius.net	9.00-6.00 Mon-Fri	ISDN / LLO	Netkonect
Small Planet	(0171) 515 9889	admin@smallplanet.co.uk	www.smallplanet.co.uk	10.00-18.00 Mon-Fri	ISDN / LLO	BTnet
Smartways Internet	(01604) 670 500	info@smartways.com	www.smartways.com	9.00-18.00 Mon-Fri	ISDN / LLO	Wisper
Star Internet	(01285) 647 022	info@star.co.uk	www.star.co.uk	8.30-19.00 Mon-Fri	ISDN / LLO	Global One / Wisper
Technocom	(01753) 714 200	isales@technocom.net	www.technocom.net	9.00-17.30 Mon-Fri	ISDN / LLO	Technocom
The Education Exchange (EDEX)	(0181) 296 9201	info@internet.net.uk	www.internet.net.uk	24 hours a day	ISDN / LLO	INS
VAS-NET	(01732) 865 555	sales@vas-net.net	www.vas-net.net	8.00-20.00 every day	ISDN / LLO	VAS-NET
VBCnet	(0117) 929 1316	sales@vbc.net	www.vbc.net	24 hours a day	ISDN / LLO	VBCnet
Web Plus	(0345) 932 758	sales@webplus.co.uk	www.webplus.co.uk	9.00-21.00 Mon-Fri / 9.00-20.00 W/e	ISDN / LLO	Web Ltd / BTnet
WebScotland	(0141) 418 0880	sales@webscotland.co.uk	www.webscotland.co.uk	9.00-17.00 Mon-Fri	ISDN / LLO	BTnet
Wisper	(0171) 432 0324	sales@wisper.net	www.wisper.net	24 hours a day	LLO	Wisper
Zereau	(0800) 064 1770	sales@zereau.com	www.zereau.com	9.00-17.30 Mon-Fri	LLO	Wisper
Full UK coverage						
AAP Internet	(0181) 427 1166	sales@aapi.co.uk	www.aapi.co.uk	10.00-20.00 Mon-Fri / 14.00-18.00 W/e	£12.91*	Netkonect
Abel Internet	(0345) 576 015	info@abel.co.uk	www.abel.net.uk	9.00-23.00 every day	£8.81*	Quza / Racal
ACGNET	(0171) 377 9114	sales@acgnet.co.uk	www.acgnet.co.uk	9.00-18.00 Mon-Fri	£11.81*	Nildram
AIC	(01279) 865 290	entanet@aic.co.uk	www.aic.co.uk/entanet	9.00-18.00 Mon-Sat	£8.81*	VBCnet
Airtime Internet Resources	(01254) 676 921	sales@airtime.co.uk	www.airtime.co.uk	9.00-17.00 Mon-Fri	£15.27*	UUNET
Albatross	(01603) 442 233	enquiries@albatross.co.uk	www.albatross.co.uk	9.00-19.30 Mon-Fri	£11.74*	BTnet
Argo Interactive	(0500) 585 586	info@argonet.co.uk	www.argonet.co.uk	10.00-17.00 Mon-Sat	£11.75*	UUNET
Astra Internet	(0800) 018 2001	sales@astra.co.uk	www.astra.co.uk	9.00-17.00 Mon-Fri/ 9.00-12.00 Sat	£12.93*	GX Networks
Atlas	(0171) 312 0400	info@atlas.co.uk	www.atlas.co.uk	24 hours a day	£14.10*	UUNET
Aviators Network	(01727) 868 468	info@avnet.co.uk	www.avnet.co.uk	24 hour callback	£11.75*	PSInet
Baynet	(01222) 256 401	enq@baynet.co.uk	www.baynet.co.uk	8.00-18.00 Mon-Fri / 9.00-17.30 Sat	£12	Netkonect
Beacon Internet Services	(01749) 831 056	sales@thebeacon.co.uk	www.n-e-t.co.uk/beacon/	8.00-18.00 Mon-Fri	£11.75*	NetOnline

Key: LLO – leased line only ISDN/LLO – ISDN & leased line only * – price includes VAT

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The most comprehensive listing of UK Internet service providers

Name	Phone	Email	Web page	Technical support	Cost (pm)	Backbone
Full UK coverage						
Boots Internet	(01462) 743 112	support@boots.com	www.boots.com	9.00-22.00 Mon-Fri	£12.75	VBCnet
breathe on line	(0800) 298 3030	sales@breathe.co.uk	www.breathe.co.uk	24 hours a day	from £6.99*	Scottish Telecom
BT Internet	(0800) 800 001	support@btinternet.com	www.btinternet.com	24 hours a day	£11.75*	BTnet
Cable and Wireless Internet	(0500) 200 980	support@mcmail.com	www.cwcom.net	24 hours a day	£10*	Cable and Wireless
Cable Internet	(0500) 500 100	sales@cableinet.co.uk	www.cableinet.co.uk	9.00-21.00 every day	£11.75*	Cable Internet
Cable Online	(0800) 506 506	info@cableol.co.uk	www.cableol.net	24 hours a day	£11.75*	NTL Internet
CableNet	(01424) 830 700	info@cablenet.net.	www.cablenet.net/cablenet	24 hours a day	£11.69*	VBCnet
Castle.Net	(0181) 477 5623	sales@castle.net.uk	www.castle.net.uk	6.00-21.00 Mon-Fri	£8.81*	Technocom
Charis Internet Services	(0121) 248 5800	duncan@charis.net	www.charis.net	8.00-19.00 Mon-Fri / 8.00-12.00 Sat	£11.75*	Cable Internet
Cheapnet	(0990) 168 160	info@cheapnet.co.uk	www.cheapnet.co.uk	9.00-18.30 Mon-Fri	£58.75*pa	Capethorn
Chertsey Communications	(01344) 640 594	info@chertsey.com	www.chertsey.co.uk	9.00-22.00 every day	£11.75*	Wisper / VBCnet
City Netgates	(0117) 907 4000	info@netgates.co.uk	www.netgates.co.uk	8.00-18.00 Mon-Fri	£11.75*	Wisper
CIX	(0181) 255 5151	robert@cix.co.uk	www.cix.co.uk	9.00-22.00 Mon-Fri / 12.00-18.00 Sat	£7.34*	BTnet / INS
ClaraNET	(0800) 358 2828	info@clara.net	www.clara.net	24 hours a day	£11.63*	Netkonect / INS
Cocoon Internet Services	(0171) 792 8945	admin@cocoon.co.uk	www.cocoon.co.uk	8.00-20.00 Mon-Fri / 10.00-19.00 W/e	£17.62*	UUNET
Colloquium	(0500) 008 543	sales@colloquium.co.uk	www.colloquium.co.uk	24 hours a day	£14.10*	UUNET
Computalynx	(01604) 231 437	sales@computalynx.co.uk	www.computalynx.co.uk	9.00-21.00 every day	£11.75*	Wisper
CPD Online	(0181) 446 7890	sales@cpd.co.uk	www.cyberspace.cpd.co.uk	9.00-18.00 Mon-Fri	£11.75*	Nildram
Cyber Ware	(01733) 765 005	steve@cyberware.co.uk	www.cyberware.co.uk	9.00-midnight Mon-Fri	£11.74*	BTnet
CYBERphile Internet	(01543) 454 840	info@cyberphile.co.uk	www.cyberphile.co.uk	8.30-18.30 Mon-Fri	£11.75*	Xara
Cyberscape	(01253) 724 000	glenn@cyberscape.net	www.cyberscape.net	10.00-18.00 Mon-Fri	£12	Cable Internet / ISPC
Datanet	(01252) 810 081	info@data.net.uk	www.data.net.uk	24 hours a day	£17.62*	Planet Online
Demon	(0181) 371 1234	sales@demon.net	www.demon.net	24 hours a day	£11.75*	Demon
Direct Connection	(0800) 072 0000	sales@dircon.net	www.dircon.net	9.00-21.00 Mon-Fri / 10.00-17.00 W/e	£13.50*	Direct Connection
Direct Net @ccess	(01232) 201 555	info@d-n-a.net	www.d-n-a.net	9.00-18.00 Mon-Sat	£8.82*	NTL Internet
Easynet	(0541) 594 321	sales@easynet.net	www.easynet.co.uk	24 hours a day	£11.99*	Easynet / BTnet
Ecosse Telecommunications	(0800) 026 7092	netsales@ecossetel.co.uk	www.ecossetel.co.uk	9.30-17:30 Mon-Fri	from £9.99*	Netkonect / Ecossetel
EDI	(01539) 731 000	info@edi.co.uk	www.edi.co.uk	9.00-17.30 Mon-Sat	£15	Planet Online
ENTANET	(0500) 368 263	info@enta.net	www.enta.net	9.00-21.00 every day	£10.58*	Cable and Wireless
Enterprise	(01624) 677 666	sales@enterprise.net	www.enterprise.net	9.00-22.00 Mon-Fri / 10.00-16.00 W/e	£9.40*	BTnet
EntWeb	(0800) 525 470	info@entweb.co.uk	www.entweb.co.uk	8.00-22.30 Mon-Fri / 10-18 Sat / 10-16 Sun	£10*	Telinco
European Gateway	(0411) 704 219	aikend@easynet.co.uk	www.europeangateway.com	24 hours a day	£13*	Easynet
Farebase	(01322) 280 011	Info@farebase.co.uk	www.farebase.net	7.00-19.00 Mon-Fri / 10.00-15.00 W/e	£16.45*	Easynet
Force 9	(0800) 073 7800	sales@force9.net	www.force9.net	7.00-23.00 every day	£9.99*	Force 9
Freedom to Surf	(0181) 881 2111	sales@freedom2surf.net	www.freedom2surf.net	9.30-17.30 Mon-Fri	£11.75*	Freedom to Surf
FreeDotNet	(0181) 568 3377	info@thefree.net	www.thefree.net	9.00-17.00 Mon-Fri	from £1.25*	Worldcom
Frontier Internet Services	(0171) 536 9090	info@ftech.net	www.ftech.co.uk	9.00-19.00 Mon-Fri / noon-18.00 Sat	£11.75*	GX Networks / Wisper
Gemsoft	(0114) 275 7070	sales@gemsoft.net	www.gemsoft.net	9.00-17.30 Mon-Sat	£12.99	Wisper / INS
Global Internet	(0870) 909 8041	info@global.net.uk	www.global.net.uk	9.00-21.00 Mon-Fri/ 10.00-18.00 W/e	£11.75*	BTnet / GX Networks
Globewide Internet Services	(0161) 953 4018	info@globewide.com	www.globewide.com	10.00-22.00 Mon-Fri	£10*	BTnet / Wisper
GreenNet	(0171) 713 1941	support@gn.apc.org	www.gn.apc.org	10.00-18.00 Mon-Fri	£15.86*	UUNET
Hi-Net	(0181) 532 6532	internet@higrade.com	www.hi-net.co.uk	24 hours a day	£11.75*	Planet Online
Hiway	(01635) 573 300	info@hiway.co.uk	www.hiway.co.uk	8.30-18.00 Mon-Fri	£14.69*	GX Networks / Wisper
IBM Global Services	(0990) 426 426	globalnetwork@uk.ibm.com	www.ibm.net	9.00-17.00 Mon-Fri	£17.62*	IBM Global Network
Intensive Networks	(01672) 511 054	sales@intensive.net	www.intensive.net	9.00-19.00 Mon-Fri	£11.75*	Wisper
Internet UK	(01827) 711 722	sales@zipmail.co.uk	www.zipmail.co.uk	9.00-17.30 Mon-Sat	£11.75*	Wisper
Intonet	(0181) 941 9195	info@intonet.co.uk	www.intonet.co.uk	8.00-20.00 Mon-Sat	£11.75*	BTnet
K Web	(01273) 763 500	info@k-web.co.uk	www.k-web.co.uk	24 hours a day	£11.69*	Planet Online
Karoo	(01482) 602 742	info@kingston.net	www.kingston.net	24 hours a day	£9.79*	Planet Online
KEMAnet	(0181) 366 0511	sales@kema.co.uk	www.kema.co.uk	9.00-18.00 Mon-Fri	£10*	Netkonect
LarkNet	(01638) 716 423	info@larknet.co.uk	www.larknet.co.uk	8.00-20.00 Mon-Fri / 9.00-13.00 sat	£11.75	Cable Internet
London Web Communications	(0800) 026 8306	internet@londonweb.net	www.londonweb.net	9.00-21.00 Mon-Sat / pager Sun	£14.68*	Netkonect
MacLine	(0181) 401 1111	orders@macline.co.uk	www.macline.co.uk	9.00-18.00 Mon-Fri	£14.10*	Atlas
Madhouse Net	(0800) 074 8283	info@madhouse.uk.com	www.madhouse.uk.com	8.00-20.00 Mon-Fri	£11.75*	NACAMAR
Mailbox Internet	(0171) 371 8558	info@mailbox.co.uk	www.mailbox.co.uk	08.00-midnight Mon-Fri	from £5.88*	Netkonect
Mercia Internet	(01827) 69166	sales@mercia.net	www.mercia.net	9.00-17.30 Mon-Fri	£11.50*	Netkonect
Mistral Internet	(01273) 747 432	info@mistral.co.uk	www.mistral.co.uk	9.30-17.30 Mon-Fri / 10.00-16.00 Sat	from £9.99*	Wisper
Mitsubishi Electric Internet Services	(0800) 226 600	enquiries@menet.net	www.menet.net	10.00-20.00 Mon-Fri / 10.00-14.00 Sat	£69.88* pa	BTnet
Moonlight	(01276) 856 868	sales@moon-light.co.uk	www.moon-light.co.uk	9.00-18.00 Mon-Fri	£14.95*	Cable Internet
Net Online	(0171) 447 7447	sales@nol.co.uk	www.nol.co.uk	9.00-20.00 every day	£11.75*	Global One / Quza
Netcom Internet	(0800) 980 9107	info@netcomuk.co.uk	www.netcom.net.uk	24 hours a day	£14.95*	Netcom
NetDirect Internet	(0800) 731 3311	info@netdirect.net.uk	www.netdirect.net.uk	9.00-21.00 Mon-Fri / 9.00-18.00 W/e	from £8.99*	BTnet / BusinessNet
Netkonect	(0171) 345 7777	info@netkonect.net	www.netkonect.nco.uk	9.00-18.00 Mon-Fri / 9.00-13.00 Sat	£11.75*	Netkonect
NetMatters	(0345) 573 377	info@netmatters.co.uk	www.netmatters.co.uk	8.00-20.00 Mon-Fri	£11.75*	Wisper / VBCnet
Newbury Internet	(01635) 569 123	sales.enq@newbury.net	www.newbury.net	24 hours a day	£11.75*	Intensive Networks
NewNet	(07000) 639 638	sales@newnet.co.uk	www.newnet.co.uk/home	9.00-22.00 every day	£9.74*	Wisper / VBCnet
Nildram	(0800) 072 0460	sales@nildram.co.uk	www.nildram.net	9.00-23.00 every day	from £5	Nildram
On-Line Entertainment	(0181) 591 1125	sysop@on-line.co.uk	www.on-line.co.uk	9.30-17.30 Mon-Fri	£15* pq	ANS
Onyx	(0345) 715 715	sales@onyxnet.co.uk	www.onyxnet.co.uk	8.30-18.00 Mon-Fri	£11.75*	Onyx
Orchid Information Systems	(01763) 244 007	internet@orchinfo.co.uk	www.orchidinfo.co.uk	8:30-18..00 Mon-Fri	£11.75*	Cerbernet
Paston Chase	(01603) 502 061	sales@paston.co.uk	www.paston.co.uk	9.00-17.00 every day	£10.58*	UUNET
Pinnacle Internet	(01293) 613 686	info@pncl.co.uk	www.pncl.co.uk	9.00-19.00 Mon-Fri	from £10.64*	UUNET
Pipemedia OnLine	(01455) 828 218	sales@pipemedia.net	www.pipemedia.co.uk	24 hours a day	£11.75*	VBCnet
Poptel Networks	(0171) 923 9465	info@poptel.net	www.poptel.org.uk	9.30-18.00 Mon-Fri	£11.75*	GX
PORTHILL.COM	(0702) 110 1200	sales@porthill.com	www.porthill.com	10am-10pm every day	from £3.99*	Cable Internet
Power Internet	(01908) 605 188	info@powernet.co.uk	www.powernet.co.uk	24 hours a day	£14.10*	BTnet
Prestel Online	(0990) 223 300	enquiry@netsales.prestel.co.uk	www.prestel.co.uk	24 hours a day	£10.56*	Scottish Telecom

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Annual £120
Prices exclusive of VAT
Commercial Internet Solutions
Telephone 0171 536 9090

pick a provider

The most comprehensive listing of UK Internet service providers

Name	Phone	Email	Web page	Technical support	Cost (pm)	Backbone
Full UK coverage						
Primex	(01908) 643 597	info@alpha.primex.co.uk	www.primex.co.uk	8.00-21.00 every day	£11.75*	On-Net / Netkonect
Pro-Net Internet Services	(0181) 200 3565	sales@pro-net.co.uk	www.pro-net.co.uk	9.00-18.00 Mon-Fri / 9.00-16.00 Sat	£99 pa	Cable Internet / ISPC
ProWeb	(0500) 636 343	sales@proweb.net	www.proweb.co.uk	24 hours a day	from £10*	Diamond Cable Comms
PSI Net	(01223) 577 577	marketing@uk.psi.com	www.uk.psi.com	9.00-21.00 Mon-Fri / 9.00-18.00 Sat	£9.95	PSI Net
PurpleNet	(0800) 783 4535	sales@purplenet.co.uk	www.purplenet.co.uk	9.00-22.00 Mon-Fri / 10.00-18.00 W/e	£11.69*	Wisper
Python Internet	(0870) 606 0125	sales@python.co.uk	www.python.co.uk	9.30-19.00 Mon Fri	£11.75*	INS
RapidNet	(0151) 722 0304	sales@rapid.net.uk	www.rapid.net.uk	9.00-17.30 Mon-Fri	£9.40*	Cable Internet / ISPC
Research Machines	(01235) 826 868	sales@rmplc.co.uk	www.rmplc.co.uk	9.00-21.00 Mon-Fri	£12.50	GX Networks / Wisper
Round One Communications	(01237) 425 100	info@rom.net	www.rom.net	9.00-18.00 Mon-Fri	£12	UUNET / GX Networks
RSC Internet	(01224) 585 113	info@rsc.co.uk	www.rsc.co.uk	9.00-18.00 Mon-Sat	£9.99*	BTnet
SAQ Network Services	(0800) 801 514	sales@saqnet.co.uk	www.saqnet.co.uk	24 hours a day	£12.50*	BTnet / C&W / INS
Scotland Online	(0845) 270 0027	admin@sol.co.uk	www.scotland.net	24 hours a day	£11.75*	Scottish Telecom
SIMNET	(0800) 0745 547	sales@simnet.co.uk	www.simnet.co.uk	9.00-21.00 Mon-Fri / 9.00-12.00 Sat	£9.40*	Telinco Internet Services
Sonnet Internet	(0171) 891 2000	enquire@sonnet.co.uk	www.sonnet.co.uk	9.00-21.00 Mon-Fri / 9.00-18.00 Sat	£14.68*	BusinessNet
SOS Internet	(01271) 321 145	sosi@sosi.net	www.sosi.net	9.00-17.30 Mon-Sat	£11.75*	Intensive Networks
SurfAid	(0870) 907 1000	info@surfaid.org	www.surfaid.org	9.00-21.00 Mon-Fri / 10.00-18.00 W/e	from £7.50	GX Networks
Surflink	(0181) 903 2777	info@surflink.co.uk	www.surflink.co.uk	24 hours a day	£7.99	BTnet
Telinco Internet Services	(0800) 542 0800	sales@telinco.net	www.telinco.net	9.00-21.00 Mon-Sat	£5*	Cable Internet / ISPC
The Network Group	(01293) 616 000	info@network-group.com	www.network-group.com	8.30-18.00 Mon-Fri	£15	UUNET
Time Internet	(01483) 860 606	office@time-technology.co.uk	www.time-technology.co.uk	8.30-18.00 Mon-Fri	£12.50	Aladdin
Timewarp Internet	(0161) 950 8855	sales@timewarp.co.uk	www.timewarp.co.uk	9.00-20.30 Mon-Fri	£8.25*	ISPC / Wisper
TMS	(01902) 420 999	sales@tmsnet.co.uk	www.tms.net.uk	8.30-17.00 Mon-Fri	£12*	BTnet
TriNET	(01539) 731 000	dmacdonald@trinetimb.com	www.trinetimb.com	9.00-17.30 Mon-Fri	£11.75*	Planet Online
U-Net	(01925) 484 444	sales@u-net.net	www.u-net.net	24 hours a day	£14.10*	U-Net
UK Online	(01749) 333 333	sales@ukonline.co.uk	www.ukonline.co.uk	24 hours a day	£11.99*	Easynet
UKIP	(01772) 908 000	internet@ukip.co.uk	www.ukip.co.uk	9.00-18.00 Mon-Fri / 9-17 Sat / 10-16 Sun	£146.87* pa	NACAMAR/Cable Internet
UUNET (Pipex Dial)	(0500) 567 000	sales@uk.uu.net	www.uk.uu.net	9.00-20.00 Mon-Fri / 10.00-18.00 Sat	£12.75	UUNET
Virgin Net	(0500) 558 800	advice@virgin.net	www.virgin.net	24 hours a day	£11.99*	NTL Internet
Wave Rider Internet	(0121) 603 3888	info@waverider.net.uk	www.waverider.co.uk	24 hours a day	£12*	VBCnet
Wavenet	(01253) 794 386	sales@wavenet.co.uk	www.wavenet.co.uk	10.00-18.00 Mon-Fri	£72pa	BTnet
Webpro	(0181) 886 2424	info@webpro.net.uk	www.webpro.net.uk	24 hours a day	£12.50	Planet Online
Webscape	(01963) 370 800	webmaster@webscape.co.uk	www.webscape.org	24 hours a day	£15	GX Networks
WinNET Communications	(0181) 930 6688	sales@win-uk.net	www.win-uk.net	9.30-18.00 Mon-Fri	£17.63*	UUNET
Wirenet Amiga	(01925) 496 482	sales@wirenet.co.uk	www.wirenet.co.uk	9.00-19.00 Mon-Fri / 9.00-13.00 Sat	£14.25*	U-Net
WiSS	(01248) 602 405	enquiries@wiss.co.uk	www.wiss.co.uk	9.00-22.00 every day	£11.75*	Celtic Internet
Woden Network Systems	(0121) 242 4500	sales@woden.com	www.woden.com	8.30-22.30 Mon-Fri	£10*	VBC Net
Worldwide Web Services	(01784) 898 800	info@webs.co.uk	www.webs.co.uk	9.00-18.00 Mon-Fri	£17.62*	U-Net
X Stream	(0870) 730 6466	info@x-stream.com	http://x-stream.com	24 hours a day	FREE	Colt Internet
Zetnet Services	(01595) 696 667	info@zetnet.co.uk	www.zetnet.co.uk	24 hours a day	£7.50*	BTnet / Wisper
Zoo Internet	(0345) 326 326	support@zoo.co.uk	www.zoo.co.uk	9.00-21.00 every day	£12.50*	Zoo Internet
Zulu Internet	(01494) 758 895	sales@zulu.co.uk	www.zulu.co.uk	8.00-21.00 every day	from £5*	Nildram
East						
AngliaNet	(01473) 211 922	tony@anglianet.co.uk	www.anglianet.co.uk	8.00-21.00 Mon-Sat / 11.00-19.00 Sun	£11.75*	Wisper
Foobar Internet	(0116) 233 0033	sales@foobar.co.uk	www.foobar.co.uk	9.00-17.00 Mon-Fri	£11.75*	Netkonect
KeConnect Internet Services	(01473) 403 020	sales@keconnect.co.uk	www.keme.co.uk	9.00-21.00 Mon-Fri / 10.00-14.00 W/e	£11.75*	Wisper
Net Solutions Europe	(01255) 233 300	ScottC@nse.co.uk	www.nse.co.uk	9.00-17.00 Mon-Fri	£15	Technocom
RJT Internet Services	(01493) 857 048	postmaster@rjt.co.uk	www.rjt.co.uk	9.00-17.00 Mon-Sat	£7.99	BTnet
Ireland						
Creative Online Media	(01232) 370 124	Info@globalgateway.com	www.globalgateway.com	8.30-17.30 Mon-Fri	£9.95	PSInet
Indigo	(00353) 1 604 6901	info@indigo.ie	www.indigo.ie	9.00-18.00 Mon-Fri	£11.75*	AT&T / BBN Planet
Ireland On-Line	(00353) 1 855 1739	sales@iol.ie	www.iol.ie	9.00-18.00 Mon-Fri	£10	UUNET
Telecom Internet	(00353) 1 269 22 22	sales@tinet.ie	www.tinet.ie	9.30-17.30 Mon-Fri	£12	Telecom Eireann
The Internet Business	(01232) 424 190	info@tibus.net	www.tibus.net	9.00-17.30 Mon-Fri	£8.81*	BTnet
Unite Solutions	(01232) 777 338	solutions@unite.net	www.unite.net	9.00-17.00 Mon-Fri	£12.50	BTnet
WydeWorld	(01232) 300 555	info@wydeworld.com	www.wydeworld.com	8.30-21.00 Mon-Fri	from £125* pa	NTL Internet
London and South East						
Adept	(01843) 850 444	sales@adept.co.uk	www.adept.co.uk	8.30-18.00 Mon-Fri	£11.75*	Netkonect
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Bogomip	(0181) 960 3050	info@mail.bogo.co.uk	www.bogo.co.uk	10.00-20.00 Mon-Fri / 10.00-17.00 W/e	£12	BTnet
CentreNet	(0800) 243 336	info@centre.net.uk	www.centre.net.uk	24 hours a day	£8.33*	BTnet
ComeNet Technology	(0181) 357 9111	sales@come.net.uk	www.come.net.uk	8.30-20.00 Mon-Fri	£35*pq	UUNET / VBCnet
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Inter-Computer Technology	(0171) 486 9601	sales@inctech.com	www.inctech.com	24 hours a day	£15	Wisper
INTERact Internet	(01753) 776 699	sales@interact.net.uk	www.interact.net.uk	24 hours a day	£9.40*	Cable Internet / ISPC
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KENTnet Internet Services	(01622) 844 801	sales@kentnet.co.uk	www.kentnet.co.uk	9.00-21.00 Mon-Fri / 9.00-17.00 Sat-Sun	£10.50	BTnet
London Internet	(0171) 838 1199	s.ken1@dialin.net	www.london-internet.net	9.00-18.00 Mon-Sat	£11.75*	Intensive Networks
Maidenet	(01628) 825 757	enquires@maidenet.co.uk	www.maidenet.co.uk	9.00-17.00 Mon-Fri	£15	BTnet

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Name	Phone	Email	Web page	Technical support	Cost (pm)	Backbone
London and South East						
MetroNet	(0800) 074 1881	info@metronet.co.uk	www.metronet.co.uk	10.30-19.00 Mon-Sat	£10.79	Quza
Moose	(01923) 238 248	info@moose.co.uk	www.moose.co.uk	8.00-18.00 Mon-Fri	£11.75*	BTnet
Netmania	(0181) 252 1199	info@netmania.co.uk	www.netmania.co.uk	11.00-11.00 Mon-Fri	£42.50 pa	BTnet
Pavilion Internet	(01273) 607 072	info@pavilion.co.uk	www.pavilion.co.uk	24 hours a day	£12.55*	Easynet / BTnet
SoftProg NET	(0181) 788 0656	sales@softprog.co.uk	www.softprog.net	9.00-19.00 Mon-Fri	£14.10*	BTnet
Thames Global Internet Services	(01344) 641 627	info@tgis.co.uk	www.tgis.co.uk	9.00-21.00 every day	£9.99*	Cable Internet / ISPC
UK2NET	(0171) 538 0253	sales@uk2net.com	www.uk2net.com	9.00-18.00 Mon-Fri	from £9.69*	GX Networks
Vodanet	(01708) 863 043	ops.manager@dialin.net	www.vodanet.net	9.00-17.00 Mon-Fri	£12.99	Intensive Networks
VossNet	(01753) 737 800	info@vossnet.co.uk	www.vossnet.co.uk	9.00-19.00 Mon-Fri / 10.00-15.00 Sat	£11.75*	Cable Internet / ISPC
Websurfer	(0181) 354 8000	info@websurfer.co.uk	www.websurfer.co.uk	10.00-22.00 Mon-Fri	£11.75*	Wisper
Midlands						
Brunel Internet	(01922) 4598 90	sales@brunel.co.uk	www.brunel.co.uk	9.00-18.00 every day	£15*	BTnet
Discovery	(01203) 364 400	invent@discover.co.uk	www.discover.co.uk	8.30-17.00 Mon-Fri	£11.75*	Technocom
EMNET	(0115) 956 8260	enquiries@emnet.co.uk	www.emnet.co.uk	8.30-18.00 Mon-Fri	£7.82*	NTL Internet
Fenetre	(01538) 398 298	sales@fenetre.co.uk	www.fenetre.co.uk	9.00-17.30 Mon-Fri	£9.40*	BTnet
GMTnet	(01509) 269 999	sales@gmtnet.co.uk	www.gmtnet.co.uk	9.00-17.30 Mon-Fri	£11.75*	BTnet
Griffin Internet	(01332) 606 160	info@griffin.net .uk	www.griffin.net .uk	9.00-18.00 Mon-Fri	£14.69*	GX Networks
Netscafe	(01242) 232 121	sales@netscafe.co.uk	www.netscafe.co.uk	10.00-22.00 every day	£100*p/a	Wisper
Newgate Communications	(0121) 327 6633	marketing@newgate.co.uk	www.newgate.co.uk.	9.00-17.30 Mon-Fri	£12.50*	Easynet
Northants Computer Centre	(01604) 622539	tony@nccnet.co.uk	www.nccnet.co.uk	9.00-21.00 every day	£11.75*	Cable Internet / ISPC
Prima.net	(0115) 913 3372	sales@prima.net	www.prima.net	9.00-17.30 Mon-Fri	£11.74*	Cable Internet
Skynet Internet Services	(01604) 452 245	sales@skynet.co.uk	www.skynet.co.uk	9.00-19.00 Mon-Fri / 9.00-17.00 Sat	£11.75*	Cable Internet / ISPC
Stayfree Internet	(0116) 291 0909	sales@stayfree.co.uk	www.stayfree.co.uk	24 hours a day	£5	Wisper
The Internet in Nottingham	(0115) 956 2222	info@innotts.co.uk	www.innotts.co.uk	10.00-17.30 Mon-Fri	£14.69*	Aladdin / Wisper
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WyeNet	(01989) 762 476	Nick@wyenet.co.uk	www.wyenet.co.uk	9.00-21.00 every day	£12	Cable Internet / ISPC
North East						
FirstNet Services	(0113) 294 4224	sales@firstnet.co.uk	www.firstnet.co.uk	9.00-21.00 Mon-Sat	£12.50*	Energis
Legend Internet	(01274) 743 500	sales@legend.co.uk	www.legend.co.uk	8.00-20.00 Mon-Sat	£12.50	Sprint
NetBytes Internet	(0113) 294 4273	info@netbytes.yks.com	www.netbytes.yks.com	10.00-20.00 Mon-Fri	£7.50	Sprint
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Cybase	(0151) 227 4244	sales@cybase.co.uk	www.cybase.co.uk	9.00-17.00 Mon-Fri	£11.75*	Cable Internet / ISPC
Freeway Internet	(01204) 431 313	sales@freeway.co.uk	www.freeway.co.uk	24 hours a day	£12.95*	Wisper
Kencomp Internet	(01539) 722 559	info@kencomp.net	www.kencomp.net	9.00-17.30 Mon-Sat	£11.75*	Intensive Networks
Lakesnet	(01539) 731 000	info@lakesnet.co.uk	www.lakesnet.co.uk	9.00-17.30 Mon-Sat	£15	Planet Online
Mersinet	(0151) 475 4751	info@mersinet.co.uk	www.mersinet.co.uk	24 hours a day	£11.75*	Wisper
North-West Net	(0161) 950 7777	sales@telinco.co.uk	www.telinco. co.uk	9.00-21.00 Mon-Sat	£10*	Cable Internet / ISPC
Talk 101	(01925) 245 145	sales@mail.talk-101.com	www.talk-101.com	9.00-17.00 Mon-Fri	£11.75*	Wisper
The Internet Shop	(01253) 763 333	black-admin@blackpool.net	www.blackpool.net	9.00-18.00 Mon-Fri	£11.75*	Intensive Networks
Zen Internet	(01706) 713 714	sales@zen.co.uk	www.zen.co.uk	9.00-20.00 Mon-Fri / 10.00-17.00 W/e	£11.75*	BTnet
Scotland						
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Foremost Training	(0141) 566 6377	sales@scotnet.co.uk	www.scotnet.co.uk	8.00-17.30 Mon-Fri	£11.75*	Wisper
TweedNet	(01573) 229 933	mike@scotborders.co.uk	www.scotborders.co.uk	24 hours a day	£17.63*	Scottish Telecom
South Central						
Andover On-line	(01264) 334 822	info@andover.co.uk	www.andover.co.uk	9.00-18.00 Mon-Fri / 9.00-17.30 Sat-Sun	£12*	GX Networks
Athene Internet	(01329) 828 000	jdyer@athene.co.uk	www.athenenet.co.uk	8.30-18.00 Mon-Sat	£13.50*	Wisper
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LDS Technology	(01202) 659 991	sales@lds.co.uk	www.lds.co.uk	9.00-17.00 every day	£14.99*	BTnet
Paradise Network Services	(01256) 414 863	sales@pins.co.uk	www.pins.co.uk	11.00-19.00 Mon-Fri	£9.40*	INS
Portsmouth Net	(01705) 420 066	sales@portsmouth-net.co.uk	www.portsmouth-net.co.uk	9.00-17.30 every day	£10*	Quza
Southampton Net	(01794) 504 040	sales@southampton-net.co.uk	www.southampton-net.co.uk	9.00-17.30 every day	£10*	Quza
Supernet	(01534) 880 044	admin@itl.net	www.itl.net	24 hours a day	£14	PSInet
Total Connectivity Providers	(01703) 571 300	sales@tcp.co.uk	www.tcp.co.uk	9.00-18.00 Mon-Fri	£9.99*	VBC / Wisper
South West						
Dataday Computers	(01793) 512 074	sw-1@cccp.net	www.dataday.co.uk	9.30-17.00 Mon-Fri	£14.10*	Intensive Networks
Dorset Internet	(01202) 659 991	sales@lds.co.uk	www.lds.co.uk	9.00-17.30 Mon-Fri	£14.99	UUNET / BTnet
Eclipse Networking	(01392) 202 345	eclipse@eclipse.co.uk	www.eclipse.co.uk	9.00-18.00 Mon-Fri	£9.40*	Cable Internet / ISPC
Gifford Internet Services	(0117) 939 7722	admin@gifford.co.uk	www.gifford.co.uk	11.00-21.00 Mon-Fri / 12.00-20.00 W/e	£8.50	VBCnet
Surfers Paradise	(01635) 569 123	brian@surfersparadise.net	www.surfersparadise.net	9.00-17.00 Mon-Fri	£12	Intensive Networks
SWIS	(01752) 228 700	swis@swis.co.uk	www.swis.net	9.00-17.00 Mon-Fri	£15	GX Networks
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The Web Factory Wessex	(01249) 812 812	sales@webwessex.co.uk	www.webwessex.co.uk	9.00-17.00 Mon-Fri	£12.50*	The Web Factory
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If you've come across any bizarre Web stories, email them to smiley@internet.emap.com. Any we use win a mystery prize

The News of the Strange

But the football's on

The Net suffered from World Cup fever. Research by ISP Direct Connection showed UK Net traffic fell by a third during World Cup matches, easily beating the previous record set during *Eastenders* when numbers online dropped by almost 14 per cent. Strangely though, surfers seem unimpressed with Corrie with traffic rising by six per cent during episodes of The Street. Time for a cybercafé in Weatherfield, Smiley believes.

Turn away from the dark side

Another surprising news item is that Bill Gates is not king of the Net after all. A recent survey of 15-34 year olds – the Net generation according to those clever marketing bods – found some interesting responses to the question, who is your hero? The winner? Martin Luther King? Nah. Jesus? Pah! The winner was Luke Skywalker. The force is clearly with him after all.

A word in your ear

And finally this month, those irritating error messages could be a thing of the past. Researchers at the Massachusetts Institute of Technology are trying to bridge the gap between user and computer with soothing voice error messages. Given the success of Joanna Lumley's dulcet tones on AOL, Smiley can only wonder who would be best suited to the task. Kathy Burke "Please wait, I'm smoking a fag"? Julian Clarey "I love a warm hand on my mouse mat"? or Chris Moyles "COME ON"? Email suggestions to smiley@internet.emap.com

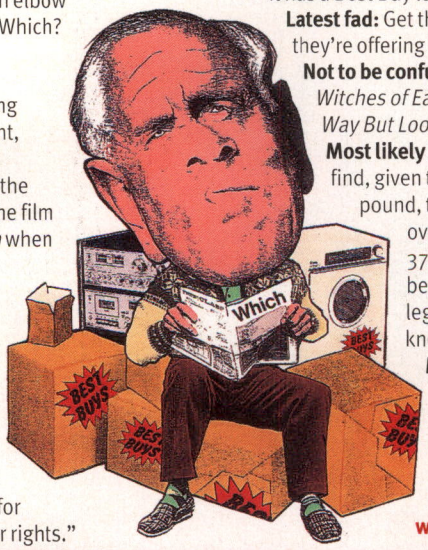
They might have gone out in the first round, but...

Speaking of bringing the Internet to new places, there's good news this month for wannabe Netheads in Iran. As part of its ongoing toning down of Shi-ite conservatism, former President Akbar Hashemi Rafsanjani is to head a research group into the potential benefits of the Internet. Currently the Net is banned in Iranian homes, but the country's ruling council is to consider relaxing the regulations.

The Smiley guide to Internet users

No 5. The Which? Online user

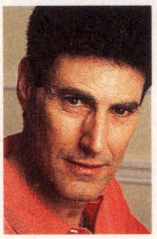
Age: 40-something. But the beard on Mrs Which? Online adds years.
Appearance: Richard Bryers in *Ever Decreasing Circles* meets Man at C&A.
Hangouts: Army and Navy stores – look in the practical rainwear section.
Known associates: The Consumer's Association, manufacturers of chunky sweaters with elbow patches and Which? magazine subscribers.
Likes: Reading the small print, collecting till receipts and the scene from the film *Falling Down* when Michael Douglas blasts the burger joint with a machine gun because he's "just standing up for my consumer rights."
Hates: Impulse purchases, retail therapy, paying one pence more than they need to, and the passing of the Woolworth bargain bin into history.
In other words: People who keep the boxes for everything they've ever bought and have their bank statements neatly arranged in a smart, yet practical, filing system.
Philosophy: Never buy anything unless it has a Best Buy logo.
Latest fad: Get this – those crazy guys, they're offering Internet access.
Not to be confused with: *The Witches of Eastwick, Every Which Way But Loose.*
Most likely to say: "I think you'll find, given the strength of the pound, that you are overcharging me by 37.481 per cent. You'll be hearing from my legal team about this. I know my rights."
Most unlikely to say: "That's a bargain. I'll take six. No, sod it, I'll have the whole shop."
More from: www.which.net



Bookmarks of the rich and famous...

Net celebs open up their browsers and share the secrets of their bookmarks with the *Internet Magazine* readers. This month it's everyone's favourite spoon-bender...

Uri Geller



Having shot to fame using the power of his mind to mess with the cutlery drawers of TV viewers, Uri has put the paranormal on the map. As well as football psychology, he's recently become a devotee of the Net where many of his areas of interest find a natural home. "For a parapsychologist, the Net is a revelation," he enthuses. "It has ended intellectual isolation, and put researchers in touch with thousands of like-minded people."

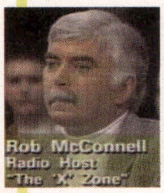
Uri's five favourite Web sites...

1) Mamma

www.mamma.com

"All my research starts here. It's not the fastest search engine, or the most stable, but it combines findings from Yahoo, Infoseek and Excite."

2) The X-Zone



www.x-chronicles.com

"Just the best graphics I've ever encountered. If you're into alien dreams and teleporting UFOs, visit Rob McConnell's paranormal pages. They're based on his Canadian radio show."

3) Postcards

http://postcards.www.media.mit.edu/postcards/

"Email in colour. A slowish upload, but once you get there, there's a choice of hundreds of virtual postcards, which you can dispatch for free to any email address."

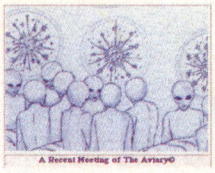
4) The Koestler Institute

http://moebius.psy.ed.ac.uk/kpu.html

"Well-organised site explaining the work of the Koestler Parapsychology Institute at the University of Edinburgh. Online experiments, fascinating archive and loads of links."

5) The Aviary

www.brotherblue.org/brethren/bbaviary.htm



"An informal network of US Government and military officials with a shared fascination for UFOs. So the conspiracy theory goes, its 12 members are dedicated to creating a smokescreen around CIA misuse of extra-terrestrial technology."

Want to know more about Uri Geller?

Check out his own site Uri Geller's Psychic City at www.urigeller.com, or email Uri at urigeller@compuserve.com *Uri Geller's Little Book of Mind Power* is published by Robson Books at £2.50. His Weird Web column appears every Wednesday in *The Times* Interface section.

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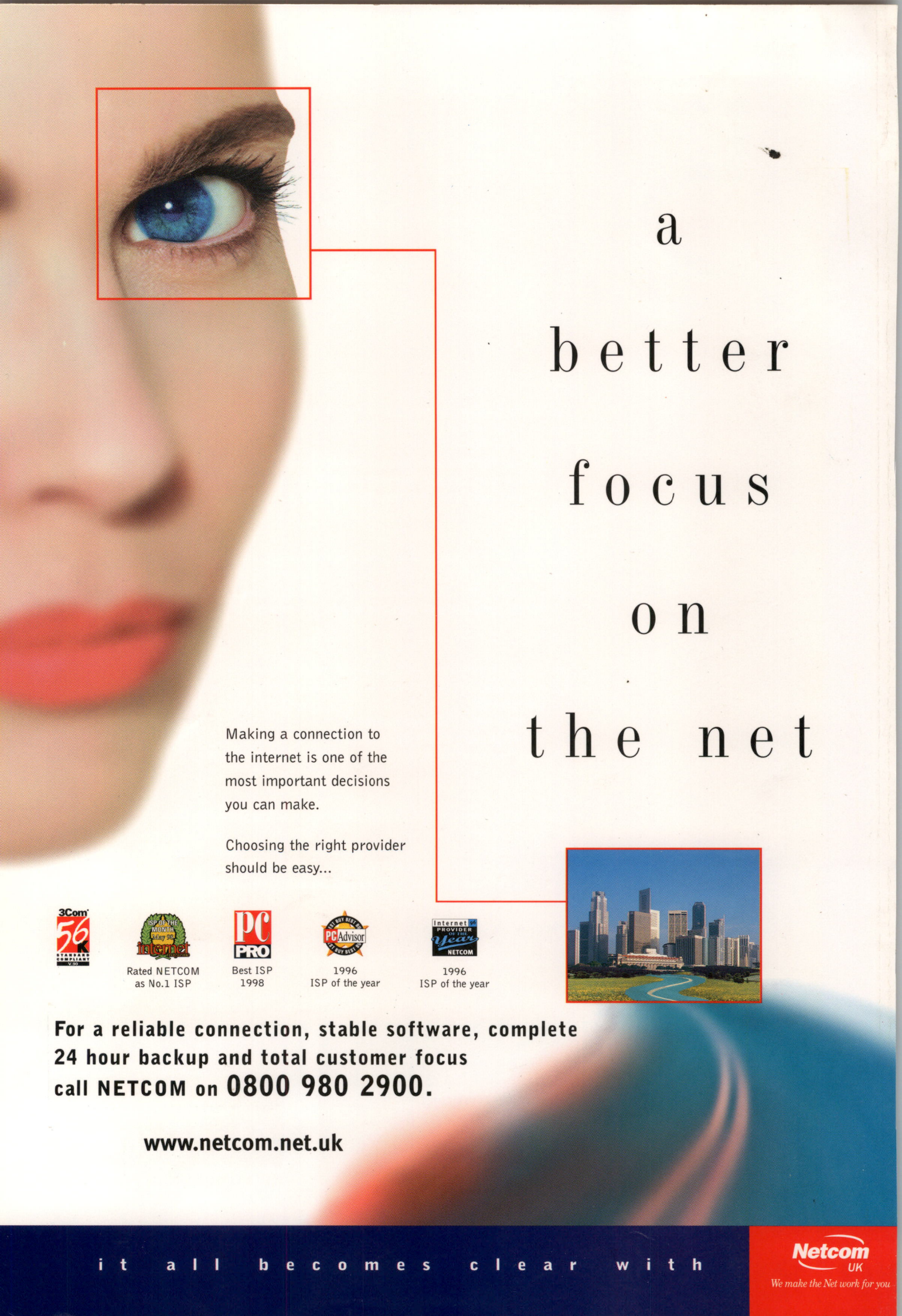

a better focus on the net

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